

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[PRICE 6D.]

[illegible]

THE BRITISH UNION TONTINE.

LAW INTELLIGENCE.

BABBINGTON AND NUTHALL COLLIERIES.

REYNOLDS V. NORTH, WAKEFIELD, AND CO.—MR. METCAL. Moved for an order of commitment against the defendants, Messrs. North, Wakefield, and Morley, the proprietors of the Babbington and Nuthall Collieries, near Nottingham, for the breach of an injunction. The learned counsel reminded the court that on an injunction was directed to issue on the 27th of July last, restraining the defendants, their workmen, agents, and servants from entering upon a piece of land of the plaintiff at Babbington, for the purpose of erecting a railway to convey their coals to the purpose of connecting the works of a projected railway to convey their coals from the Nuthall Collieries to the Nottingham Canal. The question in the case was, whether the powers of any statute containing mines of coal, passed in 1793, empowering "to convey their coals to the canal, making the compensation pointed out by the Act, could be construed to include modern railways, on which locomotive steam engines were used, or whether the defendants were at liberty to construct such a road only as came within the known definition of a "railroad" at the date of the Act. The court, without pronouncing an opinion upon the question of construction, directed an action of trespass to be brought by the plaintiff to try the right of the defendants under the Act of Parliament, and the injunction was directed to issue until the question should have been determined at law. The learned counsel having produced an affidavit of service of the injunction, and a branch of it on the part of the agent of the defendants, the Vice-Chancellor said he would grant an order of commitment nisi, which should be made absolute, if cause was not shown in the course of a week.

ROLLS' COURT—NOV. 4.

LONDON CLOTHING COMPANY V. CARPENTER.—In this case, which has been frequently before the court, the present application was on behalf of the plaintiff for an injunction to restrain the defendant, Samuel Carpenter, of Birmingham, from manufacturing, using, &c., the plaintiff's invention in India-rubber, web, braces, &c.—His Lordship granted the order.

SPARKS V. THE DEVON AND CORNWALL BANKING COMPANY.—The arguments for and against the dissolving an injunction, to restrain the defendant from issuing execution against the plaintiff, were heard on Wednesday and Thursday last, before Lord Langdale, in the Rolls' Court.—His Lordship granted the injunction, but took time to consider what amount of money, if any, should be paid into court.

COURT OF QUEEN'S BENCH—NOV. 4.

THE SOLAR LAMP.—THE QUEEN V. BIRNEY.—In this case a *scire facias* had been issued to try the validity of a patent which had been taken out by the defendant for the invention of the solar lamp. The case was tried before Mr. Justice Coleridge, and the jury found all the issues but one for the Crown, thus finding that the patent was invalid.—The ATTORNEY-GENERAL now applied for a rule nisi to set aside the verdict, or for a new trial, on the ground that the verdict was against the evidence. The learned gentleman argued the question of great length, contending that the defendant had made a great improvement on the lamps previously in use; that his specification was correct, clear, and intelligible; that it disclosed the whole secret of his invention; and that, therefore, the finding of the jury was against evidence, and the patent actually a valid one in point of law.—The COURT took time to consider.

TALACK MINING COMPANY—ALDERMAN THOMAS WOOD.

COURT OF ALDERMEN—NOV. 3.

Alderman T. Wood rose to apply to the court to investigate the charges made against him. He stated, notwithstanding the frequent applications which he had made to the court to give him an opportunity of showing that the attacks made upon him were altogether groundless, and founded in malice as well as falsehood, his brother magistrates had refused to do him the justice he had reason to expect at their hands, and had finally rejected him when returned to the court by the jury. He had, since that period, considered the decisions of the court, and he could find no record of their proceedings on the subject. He did not consider that the court had done credit and he called upon it to say what his offence was, and to afford him an opportunity of answering any accusation which might be brought against him. His earnest wish was to have an immediate and searching investigation into the conduct. He would leave the matter of investigation to the court itself. In reply to Sir P. Laurie, he (Ald. T. Wood) said it certainly was not his intention to submit any motion upon the subject, it was not for him to do so. Sir P. LAURIE said he would not hesitate to agree to any proposition to that effect. He, however, thought it necessary to mention that twelve months ago he told Ald. T. Wood, that if he (Sir P. Laurie) had been grossly and unjustly attacked by a libel, he should certainly have at once instituted proceedings in vindication of his character. Ald. T. Wood observed, in answer to Sir P. Laurie, that the person who had written the libel was not worth powder and shot. That might be the case, but a malignant slanderer ought to be compelled to pay in person, if unable to pay in purse. An alderman was bound in duty to himself and the body to which he belonged to prevent such an individual from escaping. He thought the course followed, of allowing the present year to pass, and having an inquiry, advisable, after he had read the opinion of Lord Denman.

Ald. PARSONS said his object, in the advice given to Ald. T. Wood on the day before the election, was to enable him to show that the imputation against him was groundless, and he could, if he chose, obtain a criminal not out that any one could effectively proceed in such a case but Ald. T. Wood the members would feel happy in rendering the necessary assistance. It was to answer was the imputation of having passed off coal of unscrupulous quality belonging to another mine as the produce of the Talack Mine. If there existed on ground for this charge, the ship's book, the officer's book, and other authorities, could easily be produced to prove the falsehood of the statement. Ald. PARSONS added, that he had been given to understand that the publication in which the attack was made repeated that attack. Ald. T. WOOD said he had never heard that any repetition of the libel had been made.—Ald. CURRAN and Sir P. LAURIE said they had seen the repetition of the attack in the Mining Journal.

Sir G. MARSHALL said, he wished it to be understood that the Court of Aldermen were not making any charge against Ald. Thomas Wood. A public statement had been made by a collector of very high standing in the charges made in the newspaper, and he wished to know whether these were true. Ald. CURRAN said, he would not oppose an investigation, but he protested against such a thing as a prosecution. He had grounded the veto he applied to the attack in the Mining Journal, Ald. Thomas Wood ought to have been treated as grave an imputation upon his character. When he (Ald. Curran) saw that no proceedings were taken against the printer, and when he read the judgment of Lord Denman, he could not help coming to the conclusion that the alderman who was the subject of such charges and comments was not entitled to the office of Lord Mayor while they continued uncorrected.

Ald. T. WOOD declared that he had fully answered everything in the charge by an affidavit. The only grave charge brought against him, and certainly of a very serious nature, was that of having substituted the coal of another mine in place of that of another. A mere inference and malignancy it could not be imagined that was that kind of imputation. He had declared it to the strongest manner in his affidavit, and the Court of Queen's Bench believed his denial. He now only called upon his brother aldermen to afford him the opportunity to clear his character, which he had before asked for in vain.

Sir P. LAURIE was glad that Ald. Thomas Wood had met the matter charged upon him fully. If he (Sir P. Laurie) were upon the committee of investigation, he would call upon the attorney who had been spoken of as having been employed to bring charges against Ald. T. Wood. He would call, however, upon all who knew anything of the transactions of the Talack Mining Company.—It was then resolved that a committee should, at the request of Ald. T. Wood, be appointed to investigate the charges made against him with respect to the Talack Mining Company.

LONDON AND DUBLIN BANK.—DANGEROUS BRANCH.—On the 27th ult., a deputation from this bank met several merchants, traders, and gentry, of the town of Donaghda and its neighbourhood at the Royal Hotel, for the purpose of making arrangements to establish a branch bank in that town. A very spirited discussion took place, which was followed by the signing of resolutions being carried, agreeing to the proposal for the establishment of the branch, the greater portion of the shares being taken up by influential persons present.

NATIVE OR "PULVER?"—(From a correspondent.)—Cannibals, if attended to, often import important hints, and those followed up often conduct to some valuable results. The late Sir James, of Ireland, in his travels, in carrying a pullet, which had been reared on his farm, discovered a point of native gold in contact with the limestone. It was easily half an inch square, and the probability of its being the first gold found in the land of a district which flowed through part of his estate.

MANCHESTER GEOLOGICAL SOCIETY.

No more gratifying evidence of the progress of geological science can be desired than the satisfactory proceedings at the late meeting of the Manchester Geological Society, held at their new rooms, in the Royal Institution, on Thursday week, when JAMES HEYWOOD, Esq., F.R.S. took the chair, and was well supported by gentlemen who are happy, not only in obtaining scientific knowledge, but anxious also for its dissemination.—The CHAIRMAN, in opening the proceedings, said, that the most interesting event of the past year, in our geological circle, was the visit of the British Association to Manchester, which he had thought worth while to commemorate by having a drawing taken of the visit of some of the members to the fossil trees at Dismore. The geological section was the most popular, partly from the high reputation and remarkable eloquence of the eminent persons attending it, in the person of Northampton, Mr. Murchison, and other distinguished gentlemen. One result from such meetings would seem to be, that soon it would be altogether essential to the education of a gentleman to know something about geology. He was much struck to find many leading individuals at the late meeting of the British Association on well acquainted with geology, particularly the excellent president of the Manchester Geological Society, Lord F. Egerton (late of Manchester). In this way we might expect to find this science more and more cultivated, and this society, which undertook to spread the knowledge of it here, would become more powerful and influential. The chairman said that he had got some models of the coal-field at Newcastle-on-Tyne, made in woods of different colours, by Mr. Heywood, a very able geologist residing there, which showed not only the strata above, but the sections, the work of the coal, &c. Mr. Heywood, if encouraged, was willing to come to Manchester, and take a model of that neighbourhood in wood, which would be an exceedingly valuable work, if it could be accomplished, as illustrating much more clearly than plans and sections could possibly do, the sections and strata. He hoped that some popular lectures on this subject might also be given before long.

Mr. E. W. BIRNEY (one of the secretaries) read the proceedings of the last meeting, and mentioned, that since that meeting several letters had been received in answer to invitations to be present at this meeting, one from Professor Sedgwick, who said he should have been very glad to have attended, the Bishop of Norwich were to the same effect. The hon. secretary then presented the several donations since the last meeting, which embraced many rare specimens, among which was a piece of fossil wood from Chatford, sent to him, as the secretary, with a letter, in which his lordship stated that the specimen sent was of bog wood, he believed of oak, from a bordering on Chat Moor, bore marks of having been covered with forest, the remains of trees were remarkably abundant, and some, where he had been digging, of considerable stature. The specimen forwarded was deeply charred, four feet deep in the moss, and lying on the clay beneath. It was found so that, though it seemed charred, it was probably only the peculiar process of water. Another donation, from Mr. Harkness, of Ormskirk, a gentleman of great love for the society with several communications, was a specimen of peat bog of a very extraordinary kind. Mr. Harkness stated, it consisted of pure bitumen, and when applied to a candle it blazed like pitch. (Mr. B.) believed it was the only instance of peat having been seen in the north. The next donation was a series of fossils, by Mr. S. Gibson, of Hebden-bridge, including fossil woods from the lias, and one very remarkable specimen of fossil wood, which a gentleman from London, well acquainted with the lias, had found in the lias, and the hard-wooded trees; it was a very difficult to say to which it belonged. (Mr. B.) had asked him about it, and he had offered to give it to the society. It was a piece of wood, about half an inch thick, and it was very difficult to say to which it belonged. (Mr. B.) had asked him about it, and he had offered to give it to the society. It was a piece of wood, about half an inch thick, and it was very difficult to say to which it belonged. (Mr. B.) had asked him about it, and he had offered to give it to the society.

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city," acknowledged by Mr. E. W. Birney.—"The endowment of the neighbourhood," acknowledged by Mr. T. Ashworth.—"The Manchester Literary and Philosophical Society," acknowledged by Mr. S. E. Cottam.—"The Manchester Natural History Society," acknowledged by Mr. S. Walker.—"The other literary and philosophical societies of Manchester," acknowledged by Mr. Birmingham.—Mr. J. Harkness proposed the health of the president, which having been briefly acknowledged by the chairman, he proposed Mr. G. W. Ormerod, who had shown by two able papers that, in what appeared an unpromising red sandstone district there was very much to observe.—Mr. G. W. Ormerod having briefly acknowledged the toast, on behalf of the officers generally, Mr. Cottam proposed the health of a workingman present, well known at Hebden Bridge as a blacksmith, but more widely known as a geologist, conchologist, and entomologist—indeed, as a general naturalist.—This toast was briefly acknowledged by Mr. S. Gibson.—Several serious Society of Edinburgh," which having been cordially received, the meeting separated.

THE MINES OF ALMADEN.

MADRID, OCT. 26.—At the present moment, when the Minister of Finance awaits the decision of the capitalists of Europe respecting the loan of 40,000,000 siver of Almaden, a brief sketch of the present state of those famous mines may be interesting to your readers. Instead of their "present state," I should, perhaps, speak with more propriety of the latest news thereof, that quarter of the country being now the seat of an active warfare against the brigands of Toledo and La Mancha, against whom Brigadier La Corte is directing the exertions of between 5000 and 6000 troops, and communication for at least twenty centuries, as Theophrastus speaks of their renowned elacastated contents are still so great, that they will afford a yearly supply at the present rate of 22,000 quintals for at least 500 years to come. One of the most recent improvements consists in a return to ancient workings in the Romanesque superfluently, like so many rabbits (not knowing how the hill, and completely interrupted their own screechings. After thirty years have hit upon the original and almost untouched vein of fourteen feet in breadth, and here also, as well as in Almaden and Almadeneja, their works are in full activity. They are carried on in a very old-fashioned style, partly from the healthy nature of the work, and partly from the great disinclination to change old customs, which marks the Spanish character so strongly. The isolation of the site may be judged of from the fact, that the roads around are in the state, in a perfect state of nature, and that the metallic produce is borne to on the loins of mules, for carriages of any kind are yet an unheard-of invention of the miners are, indeed, serious and lamentable. Formerly condemned to the mines in the year 1752, and discrediting the honest calling of the miner, the want of willing, active, industrious hands to carry on the work. The mines were very characteristic of the system which reduced Spain to the wreck of an empire without ships, colonies, commerce, or a dollar in her treasury; and driven per force to labour in the surrounding districts were impressed not last, for human sympathies are stronger than the caprices of courtly political economists. The peasantry gradually continued to run away, and leave the mines to the care of the felons and the barbarous Government that misery made, however, a "great step in reform." Finding that the neighbouring mines from the dread of forced labour, attempts at emancipation were high wages and certain valuable privileges, such as exemption from taxation, both local and public, from service in the army, &c. The Arragonese, however, finding themselves attacked by the serious and unknown diseases induced by working in the mercurial vapours, speedily abandoned their labours and privileges, and returned home again. The filons were, therefore, still kept in requisition until the year 1801, when they were shipped off to the and stopped the workings for a couple of seasons; during which extensive (comprising two generations) they had been endeavouring, unsuccessfully, to convince the Government that they were the most unprofitable labourers in existence. At length the revolution came, and with it glimmerings of the unprofitableness of contending with Nature. Now, I am happy to say, that the mines are all worked on the principle of free labour, well paid and willingly exerted, under difficulties and trials to health almost incredible, but which I shall endeavour to explain in my next.

OCT. 23.—Various reports have been presented to the Spanish Government on the state of the mines of Almaden of late years by their own engineers, who have been engaged in making, or rather endeavouring to make, ameliorations in the practical operations, and in the condition of the mining population there. The following passages, taken from a memoir written by Don Rafael Cabañillas, late Director-General of Mines, in 1837, respecting the state of the mines of Almaden, and the condition of the mining population, will be read with interest. "At these mines have augmented in extension, and their annual produce in mercury has gone on increasing successively, the population of Almaden and Almadeneja no longer suffice for all the works, subterranean and superficial. These daily require more individuals; and further, when there is a necessity to give at times an active impulse to the extraction from the various provinces of the kingdom, and even from Portugal, but generally they return home to re-establish it. (The latest returns give a total of above 2000 individuals daily employed about these mines during the working season, including those employed in bringing wood for fuel and subterranean works, and those engaged in the carriage of the quicksilver to Seville. The inhabitants of Almaden, Almadeneja, and Chelton are, however, those who sustain the mines, and in the unhappy epochs in which political occurrences diverted the funds which ought to have gone to pay the debt miners, the entire plan of operations must have been stopped, and the administrators totally ruined. The honest miners, however, remained steady at work, pumping, cutting out, and building up, as usual, although the Government was, at times, totally unable to pay up what they had earned; however, had, or far back as 1700, received satisfactory proofs that those their health better than those who remained altogether engaged in the mines; and liberally appropriated to their free use the estates of Castile, in the most rapid and favourable efforts on the health of the mining population, enabling them to augment at once the substance, the numbers, and the conduct of the little republic. Notwithstanding, every year many individuals are constantly extending, the officers must be replaced by others. The truth is, that both in Almaden and Almadeneja deaths and wounds are unhappily very frequent, and bodies may be seen brought forth from those more bloody and dangerous than can be found, perhaps, on a field of battle. Amongst the most common of these accidents may be seen several blinded, lame, or deprived of some, which keep the sufferers in continual agitation, are very general, almost terminating in chronic maladies disabling them for life. Some fall into a species of palsy, others suffer in their intellectual faculties, experiencing a kind of stupor, which frequently becomes permanent; these unhappy sufferers are never long, afflicted as they are with some one or more of those maladies in a less or greater degree. The children, too, who, from their early years, devote themselves to such labours, thrive badly, many become lame or disabled even before they pass the age of boyhood, and the constitutions of all generally distinguished by their stunted and discoloured aspect; and whether from the cause of their labours in the mines, or the effect of the fumes of the sulphuric acid, or perhaps of both at once, certain it is that they present a most pitiable spectacle to all beholders."

A more recent report, presented by Don Joaquin del Riego last year, gives a detailed statement of all the others afflicted through various causes during the five years ending 1836. These amount to 307 victims, 13 died in the mines, 14 in the hospitals, 14 in the country, 13 died in the country, and 130 died in the country, during a space of five years. This enormous number of deaths, which is the result of the same proportion of disease and death takes place in the deep mines of Idria.

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ON CONDENSING AND PURIFYING NOXIOUS GASES, AND ARRESTING THE FUMES OF LEAD AND COPPER ORES.

It has long been a desideratum to purify effectually the smoke generated in extensive manufacturing and densely-populated towns, as well as to relieving the inhabitants in the vicinity of alkali, lead, and copper works, from inhaling the deleterious and noxious gases and vapours evolved during the process of making sulphate of soda, and of extracting lead and copper from their respective ores. It was only during the last session that a bill was introduced into, and passed, the House of Parliament, for improving the town of Leeds, and the parties who had the conduct of that measure very wisely and properly inserted a clause compelling the manufacturers to consume, purify, or condense the smoke generated in their furnaces—a boon to the town which every inhabitant must appreciate, since it has been ascertained that the air of Leeds is daily contaminated, and highly charged, with the smoke emitted from 1500 furnace flues and engine chimneys. This, together with other causes, induced several parties to take out patents for remedying the evil, most of which have proved either inefficient in principle or too expensive for general adoption. Messrs. Hedley and Rodham, of Newcastle-upon-Tyne, have, however, patented an invention which has entirely overcome every difficulty. The simplicity of their plan is not more remarkable than its complete efficiency, and it cannot fail of being brought rapidly into general use. The apparatus consists of a series of ascending and descending flues, so connected with each other that the gases, smoke, and fumes arising from one or more fires, stoves, or furnaces, are made to pass through them, and then the purified products are evolved from the chimney, or vent; and the flues are so arranged that streams or showers of water are caused to descend, and mix with the gases, smoke, and fumes, in the descending flues, by which means they are washed and forced downwards. In the ascending flues no water is used, and the gases, smoke, and fumes, freely ascend, without any interruption, which they would not do if they were opposed by water falling upon them in their upward course; jets of water may also be thrown upon the vapours from the sides of the descending flues. The gases, fume, and smoke, become condensed in their descent, the deposit matter being collected in tanks below. The apparatus is applicable to all works and manufactories where smoke is generated, or where mineral, metallic, or other noxious matters are evolved into the atmosphere. The muriatic gas produced in the manufacture of alkali, and also the arsenious and other vapours arising from smelting and refining lead and copper ores, which are so deleterious to the health of the workmen, and the vegetation of the adjacent country, are entirely condensed by this process, and in the latter cases the metallic matter, which usually escapes into the atmosphere with the smoke and vapour, is wholly recovered. The apparatus has recently been attached to a reverberatory-furnace, and is now in full operation at the lead works of Messrs. Walker, Parker, and Co., Low Elswick, Newcastle-upon-Tyne. At these works carbonaceous smoke and gases, loaded with lead fume, were evolved in great quantities. By the application of this invention the smoke is entirely purified, and the whole of the metallic particles in the fume are deposited in the reservoirs below, which, to lead and copper smelters, is of the utmost importance, as all the lead that, under the common process of smelting, escapes as fume (estimated, at the least, at one-fourth part of that raised from the mines on which labour has been bestowed), is brought back to the furnace, and, in the smelting of copper, the whole of the destructive effects of the fumes are arrested and destroyed. It is found, at the lead works to which allusion has just been made, that the consumption of fuel is one-half less than under the old system, and this alone is a very considerable saving. The furnace, at the same time, works more regularly, and, owing to the steadiness of the draught, the lead produced is more abundant, and of softer quality. It is only necessary to add, that the apparatus is attached, with the greatest facility, to the ordinary chimneys of manufactories, and enjoys the advantages of simplicity in design and cheapness in construction.

ATMOSPHERIC RAILWAY.—The experiments on the temporary railway laid down by Messrs. Clegg and Samuda, on the Atmospheric principle, were again gone through on Monday last, the 31st October, at Wormwood Scrub. The notice given by M. St. Aubaire, the French Ambassador, was sudden, and we were not advised in time, but we learn that, in addition to his Excellency, there were present M. Durant St. André, French Consul-General, and M. Teissere, the scientific commission sent purposely from France by the Ministry to make an official investigation into the Atmospheric Railway; Mr. Vignoles, the engineer, whose lectures, reports, and representations, have led to this inquiry; Mr. Bergin, of the Dublin and Kingstown Railway—which company are now extending that line on this new principle; and a number of gentlemen connected with railways on the continent, particularly France, Germany, and Spain. Major Luttermann, of the Hanoverian Engineers, and M. Haseman, attended in their capacity of deputies from Hanover and members of the Railway Commission of that country. M. Teissere and Major Luttermann made separate notes of the experiments. The whole were considered very satisfactory, and it is probable a favourable report will be made to the foreign Governments.

STONE CEMENTS.—Among the numerous cements which have been brought under the notice of the public within the past few months, our attention has been directed to one known as Colling and Co.'s Rock Park Cement, which is, we believe, composed of an admixture of stone finely pulverised, mixed with plastic substance and sand. Its merits, as described in a prospectus before us, consist of its hardening by increased exposure to the atmosphere, until it assumes the appearance of stone, from which it is not easily distinguishable, either by fracture or otherwise, and its durability is proved by the fact, that, after having set for several years, it will resist after pulverisation and using it again; it requires neither paint nor colouring, does not throw out either vegetable or crystalline matter, stands the frost, and improves by keeping; there are two descriptions—the one being adapted for ornamental work, from its setting quickly, and the other, which is more gradual in the process of setting, being recommended for exteriors of houses, &c.

Duke of Cornwall's Harbour and Lanchester and Victoria Railway.—(From a correspondent.)—This company, I am glad to inform you, is at last about coming to a settlement. You are aware that about two years since the several matters in dispute between the company and Mr. Ross were "referred," in the hope of an arrangement being arrived at; it is now fully hoped that an award will shortly be made (if, indeed, not already done), and that the directors will immediately make a call, and proceed to wind up its affairs.

Le Teissere.—The reports respecting this treasure ship are now well nigh being tested, and we hope the curious anticipated by the most sanguine may be verified; her hull has already been raised to within three feet of the surface (about four feet from the bottom), at which situation she is kept by tackle, which holds strong and steady, and Mr. Taylor is engaged in arranging the apparatus so as to set work greater force, and he is of opinion that in a few days the treasure of *Le Teissere* may be gladdened the eyes of the numerous expectants.

LARGE BLOCK OF BRONZE.—A large block of bronze, upwards of twenty-two tons weight, has been found from Biscay Quarry, on the estate of J. Stewart, Esq., of Biscay, Llanthomas; the block is the best of a number supplied by Mr. David Lind, tanner of the quarry, for the erection of a colossal statue of the Queen, now in course of execution.

REVIEWS.

A Treatise on Engineering Field-Work, comprising the Practice of Surveying, Levelling, Laying out Works, &c. With numerous Diagrams and Plates. By FREDERICK BRUFF, C.E., Assoc. Inst. C.E. Second Part—"Levelling." Simpkin, Marshall, and Co. London. 1843.

The theory and practice of levelling, which forms the second part of the series in course of publication by Mr. Bruff, is, to our mind, well calculated for the attainment of the object professed by the author, and from the varied information it contains, will, doubtless, be acceptable to those whose studies are not so far advanced as to render a work of this nature unnecessary, while there is much which is valuable, if not novel, conveyed in a pleasing, and far from pedantic, style. It is with regret we learn, by a notice which accompanies the volume, that the delay which has arisen in its publication is in some degree ascribable to domestic affliction; this is to be regretted, for the author's sake. We suspect, however, that the delay will not prejudice him, but, perhaps, rather tend to advance his interests, by his labours being duly appreciated, as their results appear in so comprehensive a form as that before us, and that we shall hereafter find him as one among the many who contribute to the scientific world those results at which experience has enabled them to arrive, and at the same time developing those ideas which opportunity and observation may have afforded them the means of acquiring. To enter into any detailed notice of the treatise before us would be a work of supererogation, after the notice which appeared in our columns of the 27th of August last, on the appearance of the first volume, which was confined to surveying—it will, therefore, be sufficient for us on the present occasion to observe, that the contents of the volume embrace all those prominent points which refer to the subject on which it purports to treat. "The art of levelling (says Mr. Bruff) consists in finding or tracing a line on a given portion of the earth's surface parallel to the horizon at all its points—consequently parallel to the earth's mean surface; and any number of such points are on a true level when equidistant from the centre of the earth, considering it as a perfect sphere. Such a line would therefore be a curve; and if we were to trace curve lines, by levelling from a given point round the earth in every direction, till they returned into themselves, the superficies in which all these lines would lie, is that which we consider as the superficies of the earth. The figure which is bounded by this superficies, is that which is really measured by the combined method of astronomy and practical geometry, and is to be carefully distinguished from the actual figure of the earth, including all its inequalities (Playfair's *Natural Philosophy*). But the line of sight given by the operation of levelling is similar to that of an observer—viz., a tangent to the earth's surface at the point of observation."

Our author again, in treating on the great importance to be attached to levelling, and the many errors into which engineers have fallen from erroneous levels being taken, and that care manifested which it behoves the engineer to observe, not only on his own part, but that of his assistants, says—"The art, or rather science, of levelling is of the greatest practical utility, more so, perhaps, than any of the multifarious callings which the science of construction calls into play. Without it the architect's skill would be almost useless, and the talent of the engineer or engineer would frequently be wasted in designing impracticable structures. Important public works have often been designed upon erroneous data in this respect, which it would have been quite impossible to carry into execution—for instance—The section of one of the projected lines of railway to Brighton, and commonly known as 'Cuddy's Line,' was an incorrect, that had the 'gradients' been secured which were laid on the section, it would have involved miles of cutting of from 150 to 200 feet in depth."

That failures of this nature, where the error be not corrected in time, involve an immense waste of money, and throw discredit on the estimates of engineers generally, must be conceded by all, but more especially by those who have embarked in operations under the guidance of the engineer, whether we take Brunel, Stephenson, Locke, Blücher, or others, until it at one time became proverbial, that to arrive at a safe estimate you must first double that of the engineer, and multiply by three. That in the outset of the construction of railways there were many errors to be made, we are ready to admit. The same engineer was employed in England, Ireland, and Scotland on various lines, in making surveys, all of which were to be completed in a given time, so as to be in readiness for laying before Parliament, and that the necessary notices should be given, and the plan deposited with the proper authorities. We know, in many instances, that this was accomplished in the most careless manner, on part of the line a running survey being made, others walked over, and the greater part of the new line being laid down from old maps. The consequence of this influx of business rendered it necessary for those engineers who were employed to avail themselves of the services of all or any one who had the slightest knowledge of engineering tactics, who could lay down a plan on paper, or apply his eye to reading off a theodolite, or staff, adjusting the spirit level, or to "take a sight." It is, however, satisfactory, as it is gratifying, to know, that at the present moment we have courses of instruction at the Durham University, at the London College, the London University, and the Dublin University, devoted to engineering, while a college has been established for engineers, and the subject taken up by the Polytechnic and other institutions—it becoming now a necessary branch of study from the increased demand for services of this nature. It is, therefore, to be hoped, that henceforward, having Professors of undoubted ability, whose labours are devoted to the instruction of youth, aided by elementary treatises like the present, that we may rely with greater degree, if not with entire confidence, on the reports and estimates of engineers. The work is accompanied by numerous diagrams and plates, with tables of curvatures and refraction, as also slopes and inclines—the third, and concluding part, which will be devoted to "laying out works," is, we are given to understand, far advanced, and which will render the series perfect. We recommend to all those desirous of acquiring a knowledge of the subject, or who are not "too old to learn," to avail themselves of Mr. Bruff's work, they will gather much information, and they may avoid falling into many "quagmires" which beset the path of the engineer in the early stages of his professional career.

Act to Amend and Consolidate the Laws relating to Copyright of Designs, with Explanatory Notes, Practical Directions, Table of Fees, and Forms. By J. C. ROBERTSON and Co. London. 1842.

The pamphlet under notice gives, as the substance of its pages, a copy of the Copyright of Designs' Act, from which it appears that the Act came into operation the 1st of September last, repealing several Acts which had been previously passed, and extending the privileges to artists and manufacturers who may be disposed to avail themselves of the powers granted by the Act, which may be said to approach to that of the Law of Patents on a limited scale, although, to our mind, more simple and comprehensive. Comprehensive, however, as it may be, there can be no doubt that "explanatory notes" are most useful, more particularly when emanating from parties who make it their study to consult the laws of patents in their capacity as agents; without considering whether the explanatory notes are as simple as may be desired, yet we feel satisfied that, so far as they go, they will be found useful, and evince a general knowledge of the subject. These notes, which are appended to the several clauses, are copious; there are many which are also most pertinent, and show the necessity of care being observed on the part of inventors to consult some authority, and not act on their own judgment. We do not wish to anticipate the objects of the authors of the pamphlet, or to detract from them any of the advantages they may calculate upon from its publication, and shall, therefore, content ourselves by recommending it to those interested in the subject on which it treats.

PIT BODIES.—A new and important case was heard at the Durham County Courts, on October 28th, before H. Stapham, Esq., acting for the Under-Sheriff, respecting the construction of certain clauses in the Pit Bonds. The practice of the coal trade generally, if not universally, has been to allow the pitmen the fortnightly Saturday, when their wages are paid, as a holiday, and this is the first instance when any demand has been made for payment by the pitmen for their not being employed on that day. Mr. W. Brigham appeared for the plaintiff, Daddan—and Mr. J. E. Marshall for the defendants, the Thornley Coal Company. The bond having been read, and the case very fully gone into, the plaintiff was bound by Mr. Stapham, because it appeared, by the first count, that the action was brought to recover M. T.S., and from the form in which the action was brought (by plaintiff, or common), the question was out of the jurisdiction of that court. Mr. Brigham demanded the conduct of the defendants as being unworthy as wealthy and respectable a body, in taking a policy legal objection, instead of standing on the merits of the case, and contended that the action was maintainable. Mr. Stapham said the decision expressly met the case, and he thought the defendants were quite right in meeting the case in the manner they had, as they might wish to have the construction of the counts above upon the bond.

PROPOSED EXTENSION OF THE BRISTOL RAILWAY.—A survey is now in progress for the continuation of the Bristol Railway, by means of a tunnel line to the town of Clifton, and the country through which it runs is of a level nature. The plans and sections of the proposed line have already been deposited with the clerk of the peace, and it is the intention of the Bristol company, in the next session of Parliament, to apply for a bill to carry out the line, the expense of constructing which, according to the engineering estimates, will not exceed 15,000,000. The project is supported by his Grace the Duke of Norththorpe and by Mr. John Abel Smith, M.P.

PROCEEDINGS OF PUBLIC COMPANIES.

RIO DE ANORI GOLD STREAM WORKS COMPANY.

The special meeting of the shareholders in this undertaking, as advertised, took place on Monday, the 31st ult., for the purpose of taking into consideration the best means of still prosecuting the undertaking, and ascertaining the number of shares which may be purchased by those shareholders who feel disposed to continue the works, by payment of the calls necessary for such purpose. There were, however, (in addition to Mr. Harper, the secretary), but four gentlemen present, Messrs. Hart, Tottis, Unonius, and Short, and the business transacted by those gentlemen being considered of a private nature, it was consequently intimated to our reporter that no public business could be proceeded with. We have, however, understood that some active measures will speedily be adopted, and another meeting called on as early day. [We cannot well understand how a special meeting of shareholders can be construed as a private meeting, because a few only were present, and who, we have reason to believe, are anxious to buy up the shares. The company may be highly valuable, but, as the meeting was of a public nature, we consider the parties were wrong in excluding our reporter.]

WEST LONDON RAILWAY.

The adjourned meeting of this company was held at the office, Abchurch-lane, on Wednesday, the 2d inst.

R. GUYTON, Esq., in the chair.

The resolutions passed at the meeting, held on the 25th September, having been read, the CHAIRMAN explained, that this adjournment was made for the purpose of requesting the creditors of the company to extend the time fixed for raising the necessary sum for the completion of the railway until the 1st January, or such earlier time as might be deemed convenient by the directors. He was happy to say that, without a single exception, the creditors had signed a paper, granting the proposed extension of time; thus, one great difficulty had been got over—an additional number of shares had been subscribed for since the last meeting, but, in the present state of the company's affairs, the shareholders would see the propriety of not mentioning the number taken up. The directors were in a little difficulty about Mr. Stephenson's amended estimates, which were to have been produced this day. Mr. Stephenson said it was quite unusual for the minutiae of estimates to be publicly exhibited before they were taken up, and their production at the present time would militate much against the contractors. There had been a meeting held of the directors entitled to the allowance, but, from a sufficient number not being present, no business could be gone into. Upon the whole, they seemed disposed to fall into the views of the proprietors, and letters had been received from those gentlemen who were not present, but their report was not such as to enable the directors to give any decided opinion. He was glad to say that the whole business of the company was progressing as well as possible, and, after the 7th of next month, information more conclusive would be ready for the proprietors; he thought this meeting quite unnecessary. After some conversation, of an particular importance, respecting the estimates, the thanks of the proprietors were voted to the chairman, and the meeting adjourned.

PRESTON AND WYRE RAILWAY, HARBOUR, AND DOCK COMPANY.

The half-yearly general meeting of the proprietors was held at the office, King William-street, City, on Monday, the 31st ult. Sir P. HENRY FLETCHER, Bart., M.P., in the chair.—The CHAIRMAN, after briefly alluding to the prospects of the undertaking generally, and to the success which had taken place in the expenditure over the original estimates, called upon the secretary to read the report of Mr. Frederick Corbett, the managing director, from which it appeared that the annual expense of working the line was 15,914l., and of maintaining the harbour 37,671l. The railway expenditure for the last six months had been reduced to 5000l., and of the harbour to 1510l. The arrangement with the North Union Railway for the supply of locomotive power had been abandoned by mutual consent. The reduction in the item for salaries exceeded 2000l. per annum. The floating debt of the company, which were now in course of payment, had been reduced to 3552l., against which there was a set-off of 1465l. There was at present due for calls in arrears 12,194l. The works of the harbour were at present in abeyance, but the directors were endeavouring to obtain the assistance of Government towards carrying them out, and in connection with which they strongly urge on the proprietors the establishment of a steam navigation company, for the purpose of keeping up a regular communication with Ireland and Scotland. The deficiency in the traffic between 1841 and 1842 amounted to 34,000 passengers—5518l. The assumed deficiency for 1843 would be 8763l. Considerable discussion then ensued upon the state of the undertaking. After some pertinent remarks from a few of the principal shareholders, and an expression of confidence on the part of Mr. John Abel Smith, M.P., on the eventual prosperity of the undertaking, a resolution was passed, appointing a committee to act in concert with the directors, for the purpose of raising, on the security of the property of the company, 3000l., wherewith to pay the interest due to the Royal Exchange Assurance Company, and also to report on the future prospects of the company. Another resolution, empowering the solicitor of the company to prosecute all defaulters in respect of calls in arrears, having been passed, the meeting broke up.

VAUXHALL BRIDGE COMPANY.

The half-yearly meeting of the shareholders of this company was held at the George and Vulture Tavern, Cornhill, on Thursday, the 3d inst., JOHN WASHINGTON, Esq., in the chair.—The minutes of the preceding meeting having been read, the report of the committee last followed, from which it appeared that the revenue of the bridge for the past half-year was less than that of 1841 by 732l. 3s. 6d., which was accounted for by the re-opening of Westminster Bridge, but, as compared with 1840, there was an increase in the tolls of 1900l. The company had 30000l. in Exchequer Bills, and the balance in hand was 3260l. Several persons having evaded toll by passing over a piece of ground, they were taken before the magistrates, and the company had made arrangements for preventing the fraud in future. The report concluded with a favourable opinion of the increase of revenue to be anticipated from the growing success and extension of the various railways in the locality.—A dividend of 15s. per share was declared.—The report having been adopted, an application was made by a Miss FORTWELL, the representative of her deceased father, who was an eminent merchant, to know in whom her father's funds (said to be 14000l.) were paid, but the CHAIRMAN was unable to satisfy her on the subject, and, after some discussion, the question was agreed to be referred to the committee, who were to report the result of the inquiry to the next meeting.—The meeting passed a vote of thanks to the committee, and then adjourned.

ATMOSPHERIC RAILWAY.

For the first time in her career Ireland has taken the lead of other countries in the practical application of an improvement. The Kingstown and Dalkey Railway, which has been commenced on the atmospheric principle, is likely to prove the first step in a series of works, of which it is hard to predicate the limits either in point of extent or usefulness. The French and Hanoverian Governments have already deputed commissioners to inspect and report on the system; and a *projet*, strongly in its favour, has been laid before the Prussian cabinet by the Minister of State, M. Teissere, the French Commissioner, has arrived within the last few days in London, to make his observations on the experimental line at Wormwood Scrub; and two gentlemen deputed by the Hanoverian Government on a similar mission are daily expected. M. Teissere is a member of the Chief Commission of Railways in Paris, and is reckoned amongst the most distinguished officers of the Polytechnic School; we shall look forward to his report with considerable interest, though, in all probability, the results of the undertaking at Dalkey will be known almost as soon as those of his investigation. Mr. Pusey's letter to the Earl of Ripon, which first brought the merits of the system distinctly before the public, has, we understand, been translated into French, and published at Wormwood; it has also appeared in a German dress at Stuttgart, so that the matter may now be regarded as an *European question*. In the midst of the depressing events with which we are surrounded, it would be satisfactory to know that we were making progress in anything, even though that progress were a fairly effort to overcome others who had long outstripped us; but, seeing that in this important improvement is one of the chief means of promoting civilization, we have "taken the initiative," not only of the European nations, who generally wait to see the working of such matters in England, but also of England herself; and, considering the part, however humble, which we ourselves have in bringing the question of first order public action, we must confess we feel a high degree of pride and pleasure in accompanying these proofs of the great importance now attached to Irish undertakings by the most enlightened nations in the world. Ireland, we trust, is not destined long to remain as she has been, in the back-ground of Europe—following, if at all, timidly at its heels, in the wake of even the poorest of her neighbours, in everything that conduces to the advancement of the arts of life. We have seen Irish literature and Irish art spring up and assert their proper place at home within the last few years, and now we find science in its practical application in our every-day wants, coming in a still more direct and significant manner into operation among us. If we could only now take the lead of other countries in the cultivation of our art, we would bid fair to bid long to occupy an distinguished position among the powers of our neighbours.—*Henry Hall.*

YELLOW AMBER.—A rich mine of yellow amber, of a hardness equal to rock crystal, has just been discovered in the neighbourhood of the town of Zolotarev, near Pultawa. This discovery is the more remarkable, as up to the present time yellow amber has only been found in the Baltic, or on the shores of that sea.

SECURITY.—THE GUARANTEE SOCIETY.

Established by Act of Parliament, 18th Victoria, Session 1854.—Parties about to build dwellings of stone, where security is required, are informed that they can procure it from the GUARANTEE SOCIETY, on payment of a small annual premium, as in and to the conditions thereto annexed (see often accompanying on both sides) of solicitors' fees or relatives to be their security. This society, possessing a capital of £100,000, has now been established for more than two years, during which it has become security for hundreds of meritorious individuals, while its funds have been augmented, and are now held, by many of the principal London and country bankers, by several of the great railway companies, and by various public and private commercial establishments of the highest respectability. Lists of all of which are constantly open to inspection at the office. Persons also who are at present security for others, and who feel desirous of relieving themselves from a responsibility, which, under the most favourable circumstances, is a frequent source of uneasiness, may do so by paying a moderate sum yearly to the above society.

Forms of proposal, with full information of every description, may be obtained on application to the Secretary, Mr. Douglas, at the office, 20, Finsbury.

THE PATENT SAFETY FUSE.

FOR BLASTING ROCKS IN MINES, QUARRIES, AND FOR SUBMARINE OPERATIONS.—This article affords the safest, cheapest, and most expeditious mode of effecting this very hazardous operation. From many testimonials, and the numerous questions which have been forwarded from every part of the kingdom, they select the following letter, recently received from John Taylor, Esq., F.R.S., &c., &c.

"I am very glad to hear that my recommendations have been of any service to you. They have been given from a thorough conviction of the great confidence of the Safety Fuse; and I am quite willing that you should employ my name as evidence of this."

Manufactured and sold by the Patentees, DICKFORD, SMITH, and CO., 27, Cannon-street, London.

THE LONDON GAZETTE.—BANKRUPTS.

TUESDAY.—E. and S. Poulton, Aldersbury Posters, City, yarn merchants—A. Poulton, of Martin's-lane, bookskeeper—W. Hopper, Great Queen-street, London's-lane, carpet warehouseman—D. Lawson, Marybone-street, Piccadilly, woodchopper—J. France, Manchester, cotton manufacturer—J. J. R. J., and C. Wood, Dandy-street, Yorkshire, fancy cloth manufacturers—J. P. Stirling, Blaxey, North, coal merchant—T. Milner, York, tobacconist.

FRIDAY.—I. Hogue, W. Miller, and W. T. Grant, Wapping-wall, engineers—J. Beaumont, Tottenham-court-road, surgeon—D. Davis, Church-lane, Whitechapel, linen-draper—H. R. Water, Regent-street, milliner—J. Brown and R. H. Harcourt, White Horse-lane, drapers, manufacturers of ship controllers—W. Whapshott, Crosby-row, King-street, Southwark, engineers—John Muddell, Freeman's-court, Chesham, wine merchant—J. Hall, Winsted, Cheshire, grocer—J. Bury, Lifford, steel manufacturer—H. Milne, Southampton, woodchopper—S. A. Goldard and R. Hill, Birmingham, merchants.

PUBLIC COMPANIES.

MEETINGS.
Duncombe Copper Mining Co., 30, Birchin-lane, Nov. 5, 2.
Stonbridge Extension Canal, Office, Stonbridge Wharf, 2, 4.
Grand Union Canal, 70, Bury-street, Bladwell, 2, 11.
Huntingdon Canal, Law Society, Carey-street, Strand, 2, 8.
Margate and London Steam Co., Town Hall, Margate, 2, 10.
Norfolk Mining Association, 2, Warden-road, 10, 11.
Imperial Continental Gas A.S., 17, White Hart-court, Lombard-st., 14, 12.
Blyth Iron Company, 17, Laurence Pountney-hill, 14, 12.
Imperial Petroleum A.S., London Tavern, 17, 12.
New Brunswick, Am., Land Co., George and Vulture Tavern, 24, 12-1.

ROYAL MAIL STEAM-PACKET CO., 14, per share, Nov. 1, Roberts, Curtis, & Co.

UTTER RAILWAY COMPANY, 10, per share, Nov. 1, Roberts, Curtis, & Co.

SOUTH CAROLINA MINING CO., 12, 10s. per share, East Cornwall Bank.

SHROPSHIRE CANAL, 12, 10s. per share, East Cornwall Bank.

NOTICES TO CORRESPONDENTS.

THE MINING JOURNAL is regularly published twice a week on Saturday afternoon, at the office, 1, Crown-court, Fleet-street, where it can always be obtained, and there is no charge for irregularity in its supply, in town, other than neglect on the part of the agent through whom it is ordered; but, as respects its transmission to country subscribers, the time is shared with the Post-office authorities.

MANUFACTURE OF IRON.—In answer to many applications, we have the pleasure to announce that the publication of Mr. B. B. Rogers's series of papers "On the Manufacture of Iron, being Data for the Guidance of Great Furnace Managers," revised expressly by that gentleman, will be commenced in the Journal of next week, and continued at short intervals as the talented author may be enabled to supply them.

SEVERAL AMERICAN ASSOCIATION.—We are unable to continue our notice of this company, from having been prevented attending the meeting on Monday last, by order of the "council." Whether the course adopted by the directors, in so doing, be judicious or not, is best understood by themselves; as it is, we can form no opinion; while the statements recently promulgated, so detrimental to the character of the association, be borne out by facts or not. Honest motives should rather count publicly than avoid it.

UTTER RAILWAY.—We are aware that too many cases of deep destitution have been complained by the difficulty practiced by parties interested in the railway, not to admit the accuracy of the statements, and justice of the charges, contained in the paper forwarded to us, but we fear no real benefit would be promoted by its insertion in our columns, while too many of our readers would have reason to complain of so much space being occupied on a subject of which too much is already known and felt. We believe our correspondence to be in error as to the amount of which this country has been benefited by the various schemes enumerated—we have heard it stated as being nearly £1,000,000.

THE MINING JOURNAL,

Railway and Commercial Gazette.

LONDON, NOVEMBER 5, 1842.

The proceedings of the Court of Aldermen, on the 3d inst., in the matter of Mr. Alderman THOMAS WOOD, are given at length in our columns of to-day. We have now achieved our object—an inquiry will be instituted, and we are fully prepared to establish our charges. We do not, under present circumstances, wish to prejudice or prejudice the minds of those to whom the inquiry shall be submitted—we have made our charges against the worthy Alderman, let the committee appointed require from us evidence to substantiate—from Alderman THOMAS WOOD the denial. We fear not the result.

The sulphur trade, for the past eighteen months or two years, has been in so unsettled a state, consequent on the movements of the King of the Two Sicilies and the operations at our home mines, as to leave it questionable what may be the ultimate result, and whence we are to derive our future supply—the price being so far reduced as to render it very doubtful whether our mines can continue the supply of the article, and which, indeed, it appears to us, they cannot, without the demand be such as to enable them to raise large quantities, and thus diminish the cost per ton of agency, water charge, &c.

We propose taking a brief review of the operations of 1841, having before us an abstract of the official statements published at Naples, and returns from the county of Wicklow for the like period. By the former we gather that the total export to all countries from the ports of Sicily, in 1841, was confined to 187,101 cantars, or 14,400 tons, while, in the preceding year, they amounted to 232,730 cantars, or 18,618 tons—being a decrease in the twelve months, ending December, 1841, of 45,629 cantars, or 3,618 tons. This reduction, it is to be observed, has reference to the total exports, which amount to only one-fourth of those of the preceding year. The main causes to which may be ascribed this diminution was, doubtless, the annihilation of the monopoly—the sale of the large stock, taken by the Neapolitan Government, of TAXI and Co., and the rapid progress made by the English miner in bringing into the market his sulphur ore, or pyrites, in competition with foreign sulphur. To illustrate the latter fact, it is necessary we should see what were the imports into this country from Sicily during the years 1840 and 1841, and also the supplies to the market of the sulphur ore of this kingdom; we find then, that, in 1840, our imports reached 303,333 cantars, or 24,272 tons—the price being quoted as high, during that year, as 12s. 10s. per ton; in 1841 our imports amounted to only one-twentieth the quantity, or 20,000 cantars, or 1,600 tons—thus showing a serious falling off, and which will be the more readily seen on comparing our imports in 1837 and 1838, which amounted to 25,000 tons for the two years.

We have already noted the decline in price, arising from the large stock thrown upon the market, while, from the monopoly which

existed, the breaking of it up, and the announcement of his VOLCANIC MAJESTY to put on whatever export duty he might think fit, paralyzed the proprietors of mines. We now come to our home supply of sulphur ore, and which may be taken as ranging from 35 to 45 per cent., but which, allowing for waste in process of reduction, we will assume as yielding, on an average, 33 per cent.; of these ores the county of Wicklow supplied, in the past year, no less than 43,000 tons, equal to 14,330 tons of sulphur (that of Sicily being, we believe, 96 to 98 per cent.), while the increase in the raising of sulphur ore in that district may be judged by the mere mention that, in January it was 615 tons—in July it was 7021 tons; other cargoes were shipped to Liverpool and the more northern ports from Wales and Cornwall, but in comparatively insignificant quantities. The price of sulphur ore delivered in Liverpool at one time might be rated at 32s. 6d., but have since, we are given to understand, been sold at 21s. to 22s. per ton.

Having considered the question as relates to the falling back of the supplies from Sicily during the year 1841, which is explained by the heavy stock of Sicilian sulphur—some 40,000 to 50,000 tons—thrown on the market at "one fell swoop," at prices nearly 60 per cent. below those which that article had attained two or three years previous, and the supply of British sulphur ore—we consider the explanation is clear—but the main question to be considered is, What are the present prospects of the English miner, now that the prices are so much reduced? We will make out a rough calculation of his position on raising 1250 tons per month, which we will assume sold in Liverpool at 21s. per ton, and will then deduct the working charges:—

| | |
|--|------------|
| 1250 tons, delivered at Liverpool, at 21s. per ton | £1312 10 0 |
| Breaking and raising to surface—at 4s. 6d. per ton | £561 5 0 |
| Carrage to Wicklow—4s. 6d. ditto | £561 5 0 |
| Shipping charges and agency—10s. ditto | £92 10 0 |
| Freight to Liverpool—5s. 6d. ditto | £343 15 0 |
| Commission on sale and charges—1s. ditto | £62 10 0 |
| Four months' interest on bills—5 per cent. | £30 15 0 |
| 1000 cwt.—1s. per cent | £15 0 0 |
| Agency | £1 10 0 |
| Water charge and engine | £5 0 0 |
| Towage and materials | £20 0 0 |
| Interest on capital, say, 12,000, at 5 per cent. per annum | £600 0 0 |
| Travelling charges, postage, &c. | £30 0 0 |
| | £1432 5 0 |

—thus showing a monthly loss of [120l., even supposing that the mine was selling 1250 tons—or 1500l. loss per annum on a sale of 15,000 tons. If our figures be correct, and they are sufficiently so, we feel satisfied, for our purpose, it is clear that an advance of price must take place under any circumstances. If no immediate advance should arise, then must our home mines be "knocked," for it cannot be expected they will continue working at a loss; and should such an occurrence take place, then the Sicilian sulphur, having no competitor in the market, would, doubtless, rise, and then would it be futile to ask the home miner to resume operations. Already has the latter expended many thousands in opening new ground, extending levels, sinking shafts, erecting engines and machinery, constructing new roads, increasing his force, and taking all the necessary measures for supplying the market with a large quantity of ore at a moderate rate—that is to say, at such a price as would enable the English manufacturer to render the article to the consumer at 40 to 50 per cent. less than he has been in the habit of paying for the last few years. To avoid the loss of the advances so made, he has one only hope—and that, we venture to predict, a forlorn one—aid from the Government—a Government which has ever proved itself, by intention and act, as regardless of the interests of the miner.

We have said enough, for the present, to interest our readers in the subject, and hope that those who so seriously suffer by the Ministerial measures, which throw open our markets while those of other countries are closed to us, will use such interest or influence as they may possess to convince the Government how hurtful are the doings of both his VOLCANIC MAJESTY and themselves to those who give employment to thousands, and, for zeal and enterprise, must be reckoned among the first of Britain's Sons!

Gladly do we collate all and every information relating to mining pursuits abroad and at home, and gladly do we report on the well-doing and the prospects of the several adventures when in our power. True it is, we have a strong feeling in favour of our mines at home—next in those of our colonial possessions—and, next again, those countries in which English capital is employed, but where British sway is not exercised. We have had occasion to note our operations in England, Scotland, and Ireland, New Brunswick, Nova Scotia, Guernsey, and other localities—in North and South America, the latter almost without limit—while Spain and her possessions—Mexico, Chili, Colombia, and other provinces, have equally claimed our attention.

We have now to direct attention to Jamaica, which having furnished us with sugar, coffee, rum, and other products, and which, with other colonial possessions, cost this country 30,000,000l. for the abolition of slavery, now promise to return to those who may be disposed to invest their capital in the development of her mineral resources—those hidden riches which lie beneath the soil on which the sugar-cane and coffee trees were nourished. Were we sanguine enough to give credence to the directors and visitors of the Mount Vernon Mine in that island, we should feel disposed to embark on board the first packet, and realize for ourselves that wealth which, we fear, under the existing tariff, we are not likely to derive in this country; but, as we should like some more definite data than that with which we are presented, we are rather disposed to exercise a degree of caution, which, we think, will at least be admitted as prudent, under all circumstances, and which we would counsel others also to observe. We have, at some length, in another column, given all such particulars as we have been able to gather, from which it will be seen that the extent of the workings are very limited—that the quantity of ore raised, so far as we are informed, does not exceed a ton—that Dr. ARNOLD's report of the lodes evinces a want of mining knowledge—that of a capital (the amount of which is not known to us), one-third only has been subscribed—that seven casks, containing one ton of ore, have been shipped to Swansea, where they have been assayed, producing about 19 per cent. produce, which we have a right to suppose to be the fair average of the lode, and not selected "pills"—that the directors look to the "mother country" for aid, by the subscription of capital, and that no accounts are given of expenses incurred or results arrived at, beyond the mere notice embodied in these remarks. Having given insertion to a paragraph on the Mount Vernon Mine in a late Number, and having since carefully perused the papers which we received by the last packet, it is a duty we owe ourselves and our readers to suggest—that caution be observed ere capital be embarked.

We observe, in the "List of Patents" taken out during the past month, one having for its object an improvement in the manufacture of iron, by Mr. BROWN, of the Ystalyfera Works, Swansea Valley. It will be recollected that specimens of iron made at those works from anthracite, with hot-blast, on the principle of Mr. CRANE's patent, were subjected to a series of experiments by Mr. FAIRBAIRN, whose report appeared in our columns. We are not aware what is the nature of the improvements patented by Mr. BROWN, but presume—if with the use of anthracite, it is on a different plan to that adopted by Mr. CRANE, and which we are the more induced to suppose, from the circumstances, that, on inquiry, we learn the Ystalyfera Company have, since the judgment given in the case, "CRANE v. FAIRBANKS," turned their attention again to cold-blast, having abandoned the "make" with hot-blast, which they had previously adopted. We shall be well pleased to hear of

their success, although we have our doubts, from the evidence afforded on the trial, and the information acquired from other sources—from which we are disposed to believe that the hot-blast is not only more economical, whether in the use of anthracite, bituminous coal, or coke, but that in the former it produces iron of a strength superior to the ordinary descriptions of pig or cast-iron obtained by other processes. It is proverbial that, in Scotland and other places, where hot-air is employed in conjunction with bituminous coal or coke, the iron is tender, or, as some would call it, "rotten," being unfit for machinery where strength is required. On the other hand, it is better adapted for small foundry and ornamental castings, takes the tool readily, and is easily run in the cupelo. With respect to anthracite hot-blast iron, the report of Mr. FAIRBAIRN—the evidence given on the trial, and the numerous experiments made with satisfactory results, afford conclusive evidence that (up to the present time at least) it has a decided superiority over other hot-blast iron. It, however, remains to be seen whether the patent secured by Mr. BROWN will effect the desired object, or whether it is merely a modification of Mr. CRANE's process. We await the specification being entered, when we shall again notice it, and in the interim shall feel obliged for any information which will tend to encourage the hope we have so long entertained of anthracite being a useful agent in our smelting establishments and manufacturing, as well as on our railways and in steam navigation.

THREAVEN MACHINE FOR RAISING AND LOWERING MINERS.—On Saturday last a great number of persons assembled at Threave Mine, for the purpose of witnessing the working of the new machine just erected for raising and lowering miners. This machine, which is the invention of Capt. Michael Loane, who has also superintended its erection, is a very simple contrivance, being formed of two perpendicular rods of wood, having projections about twelve feet apart, upon which each man ascending or descending stands. In the rods are placed long iron handles, which the men lay hold of with the greatest ease. As one rod descends the other ascends, and, at every alternate step, there is a slight check, which affords sufficient time to enable the person travelling to remove from one to the other. The movement of these rods enables a man to travel at about eleven fathoms a minute, but the speed can be regulated according to the wishes of the men, by a man who is in constant attendance upon the engine. At present the speed preferred by the men is about three strokes of the engine, or twelve fathoms per minute. The machine worked admirably, and not the slightest accident occurred through the day, nor does it seem likely, that, with care, any accident could occur. At about one o'clock 100 miners, in their working dresses, and each with a candle in his hat, went down the shaft by the new contrivance for the first time, to see how it worked. The men were delighted with it, and say, that rather than again come up by the old system they would prefer waiting an hour or two for the working of the machine, but, if any of the men object to using the machine, the ladders are left for them, and on those they may climb away to their heart's content. A substantial dinner at the account-house concluded the business of the day, all parties, masters as well as men, expressing their satisfaction at the result of the experiment.

GEOLOGICAL SOCIETY.—The first meeting for the season was held on Wednesday evening, at the rooms of the society, Somerset-house, R. I. Murchison, Esq., F.R.S., president, in the chair. The meeting was very numerous, amongst the company being the Rev. Dr. Buckland, Rev. Dr. P. Smith, Professor Owen, Dr. Fitton, Mr. Lyell, Mr. Henry Hallam, Mr. Greenough, and other leading members. A great number of presents were announced, amongst which were the reports of the leading British and Foreign Scientific Societies. A paper, of considerable interest, was read from Dr. Robert Dale Owen, on the geological characteristics of an extensive district in the United States, including Ohio, Illinois, Kentucky, and other States, bounded by the Alleghany Mountains. This was rendered the more interesting from the description given by Mr. Lyell of the geology of the country, being his first public appearance since his return, having been engaged in an extensive survey of these regions. He particularly pointed out the existence of extensive coal-fields in the district of Ohio, which were larger than the whole of Great Britain, and the singular appearance in many parts, of fossil trees, in a vertical position. Geological explorations are going on very rapidly, and the New York geologists have recognised twenty-eight different series of groups below the coal measure.—[We hope to give a more detailed report of the proceedings in our next Journal.]

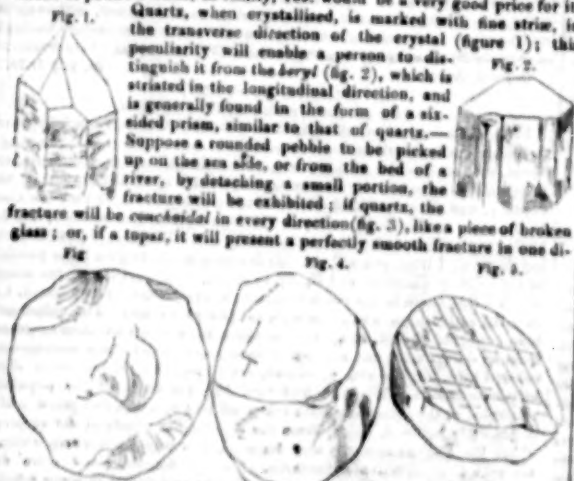
LONDON CAOUTCHOUC COMPANY.—Yesterday a most extraordinary inquiry took place at the Mansion House, before Sir P. Laurie, relative to the conduct of the London Caoutchouc Company.—Mr. J. Morley, of the firm of J. and R. Morley and Co., of 18, Wood-street, Chesham, accompanied by Mr. Bovan, of the Old Jewry, solicitor, and about fifty of the most respectable business of the city and west-end, appeared as complainant. It appeared that certain persons, representing themselves to be the London Caoutchouc Company, and professing to sell articles made of India-rubber—the interest in three-fourths of which company was said to be vested in Mr. W. Loaf, of the Old Change—had filed fifty-five bills in Chancery against the retail dealers in the metropolis, for an alleged infringement of their patent. The articles alleged to be pirated were those into which strips of India-rubber were introduced, surrounded by thread, and so covered it was impossible to discover whether they were or were not similar to the articles manufactured by the company. The first intimation given to the parties was the service of writs, requiring them to appear and answer a bill in Chancery. When the parties applied to Mr. Wright for information, they were told that they had infringed the company's rights, but that he was willing to compromise the matter, and in many instances, they were induced to pay large sums, varying from 150l. to 700l., through intimidation and ignorance of the awful proceedings with which they were menaced.—Mr. Wright always asking much larger sums than he eventually consented to take, his principle being apparently to get as much as he could. A long list of names was then read by the worthy magistrate, who said he never heard of such a system being practiced, and it appeared to him that it was a method of getting money was likely to be more profitable to the association than their professed business. The company were responsible to every man who had been induced to part with his money through apprehension, in order to stop proceedings for the "acts of the secretary and solicitors are the acts of the company."—Mr. Wright said he had proceeded by the desire of the company, in that they were not aware of the extent to which the proceedings had been carried on. He had general instructions to protect the company's interests.—Mr. Wro said some of the parties had said no more than one or two pairs of breeches, when down the solicitor popped upon them with two more demands, which were, of course, refused to what he could get, the company's solicitor not being particular as to amount, so long as he got something.—Sir Peter observed that perhaps these very breeches were purchased by the solicitors at the warehouse of the parties who accused them he never heard of anything more disgraceful, undervalued all those who might be now under threats of proceedings in Chancery not to pay or forbearing; no doubt the solicitor sent round his clerks to purchase; no doubt those who had complied might suppose they were exempted from further demand, but Mr. Wright, the attorney, might say, "I got my 200l.," and afterwards a Mr. Brown might come down for more.—After a deal of cross firing between Sir Peter and the solicitor, the secretary of the company, the case was adjourned to Friday next, to an opportunity to the other parties to attend.

TOWN SYSTEM.—An important case was tried at the Town Hall, Abingdon, a short time since, from which we find that the complainant, D. Daltry, who was in the employ of Evan Jones, an agent of the Col. Celyn and Blaina Iron Company, was paid his wages "afterwards than usual" in August last, contrary to the provision of the Truck Act. Mr. Owen (attorney of the defendant) appeared for the plaintiff, and Mr. Mudd (a barrister) for the defendant. Mr. Mudd, after replying to the case stated by Mr. Owen (the particulars of which have already appeared in our columns), said the information was informal, as it ought to have been before two magistrates, and not, as it was in this case, before only one of the Truck Act being very explicit on that point. "This objection was overruled by the magistrates to be fatal to the case, and it was, therefore, dismissed." Another summons was immediately taken out by Mr. Owen against Evan Jones, and, before the court broke up, it was properly signed by two magistrates.

LECTURES ON GEOLOGICAL MINERALOGY.

BY J. TENNANT, ESQ., F.R.S.

The subject of this lecture was Quartz, of which several very beautiful specimens were exhibited in the lecture room. The most common form of crystallized quartz is a six-sided prism, terminated by six-sided pyramids, whose faces correspond with the sides of the prism, and form, with them, an angle $141^{\circ} 40'$, the mutual inclination of any two opposite faces of the same pyramid being $75^{\circ} 52'$. The sides of the prism are transversely striated, but the planes of the pyramids are smooth and polished. The pyramidal termination frequently appears at one extremity only; this is the subject to numerous modifications, which greatly affect its general appearance. Sometimes the faces of the pyramids are alternately large and small; sometimes one face of the pyramid is so much larger than the others that it seems to form an oblique base to the prism; sometimes the prism is broad or compressed, and two opposite faces become so large that the crystal resembles a table with bevelled edges; sometimes the sides of the prism are convergent, so that the diameter at one extremity is greater than at the other. Not unfrequently, some of the solid angles, situated between the prism and each of the two pyramids, are truncated by rhombic planes; sometimes all the solid angles, situated as before-mentioned, are truncated by trapezoidal planes, obliquely placed; sometimes the prism is so short that the two terminating pyramids nearly meet, and the crystal becomes a double six-sided pyramid, with its common base truncated, or the prism entirely disappears, leaving a double six-sided pyramid, whose faces are isosceles triangles, inclined at the common base in an angle of $103^{\circ} 20'$; sometimes only one of the pyramids is distinct, and sometimes three alternate faces, on each pyramid, are so unduly extended, that the other faces almost disappear, and the crystal appears slightly rhomboidal—in fine, two or more of the preceding modifications sometimes meet in the same crystal. But, notwithstanding these numerous alterations, arising from the extension of some of the sides or faces at the expense of the others, the angles of mutual incidence remain unaffected. It has been remarked, that all the specimens from the same locality usually belong to the same variety of form. In some instances the crystals attain an uncommon size. Some of the finest specimens of English rock crystal are found in the neighbourhood of Tavistock, and provincially called "diamond," and others of great brilliancy are found in Ireland. The lecturer then explained the mode by which the portion of the rock crystal not polished was made to show flaws, &c. This is done by producing conoidal fractures in the body of the stone, and applying various cements to the parts struck, when, on heat being applied, the cement entered into the crevices formed by the hammer, and produced the desired effect. There is in the British Museum a beautiful collection of siliceous minerals (cases 20 and 21)—indeed, the finest in Europe, some of the specimens having cost large sums. Many substances are occasionally found included in rock crystal, as titanium, cleveite, chlorite, mica, and hydrous oxide of iron. Amethyst, although differing from rock crystal in colour, is the same in every other respect, the colouring matter being only oxide of manganese. Cairngorm was the same, and to coloured crystal the name of amethyst had been given, distinguishing the varieties by the colour, as "yellow amethysts," &c. In crystals that have been rent under lines are often seen, but these must not be mistaken for the striae. Ireland and Cornwall yield specimens of amethyst, but the finest come from the Brazil. A most superb group of amethysts is in the museum of the Royal Institution, in Albemarle-street, and is well worth attention. Mica is often found in crystal, and when it is not too abundant, the specimens are very beautiful. This substance is imitated in France and Italy, and is brought to great perfection, being more brilliant than the natural specimens. It is called "aventurine," and, what is curious, if the artificial production is examined with a powerful lens, the substance introduced will always be found to be in tetrahedral crystals. Several specimens of rose quartz were then produced, the colouring matter of which was stated to be the oxide of manganese, and that of Cairngorm oxide of iron.



rection, and slightly irregular in the other—like (fig. 4); this is also harder heavier, and colder, or the specimen may be calcareous spar; if so, the fracture will show small rhombs—like (fig. 5). It may also be scratched with the knife, which neither of the other will yield to, or a drop of nitric, muriatic, or sulphuric acid, will produce an effervescence with the calcareous spar, but have no effect on the quartz or topaz. Quartz is one of the most abundant minerals, affording largely into the composition of granite, gneiss, and mica slate. It is found in the beds of most rivers, and is easily known by its fracture and hardness. There are many varieties of quartz, called "cat's-eye," was only rock crystal, enclosing very small fibres of asbestos. Several varieties of siliceous minerals are never found crystallized, as opal, which is extensively found, of various qualities—those from Mexico being most remarkable, from their being one day brilliant and another day dull.

The recent investigations of Ehrenberg show that our common flint contains the siliceous coverings of myriads of the infusoria and animalcules—the scales of fish and other parts of animals; while the researches of Bowerbank clearly demonstrate that flints received their form in having been pumice. Flint is employed in the manufacture of gun and glass. For this purpose it is heated and hot, and in that state it is broken into small pieces. It is then of a white color, and capable, by the application of heat, of being reduced to powder, either in a mortar or by a pestle. This powder has been passed through fine sieves some several times, and then used to dissolve any particles of iron which it may contain in the grinding. The powder is then several times washed with water, and afterwards dried for use. The glass that is manufactured from flint is perfectly transparent and lustrous. Glass is made by melting sand, or prepared flint, with a certain proportion of soda or potash, and exposing these mixtures, in a furnace, to a violent heat for twenty-six or forty-eight hours. When they are in a perfectly fluid state part of the melted matter is taken up at the end of a long blow tube; this is done by dipping the tube into it, and having it about two or three inches full, the workman, at such time, rolling it gently upon a piece of iron, to settle it more intimately. He then blows through the tube till the melted mass of the extremity expands like a bubble, after which he rolls it again on a smooth surface to polish it, and repeats the blowing until the glass is brought as nearly to the size and form of the vessel required as he thinks necessary. Bottles, vases, window glass, &c., are made by rolling the different materials. The various tints are given to glass by the oxides of the different metals, thus:—The yellow, by silver, either the oxide or phosphates—also by antimony and iron; the purple black, by the black oxide of manganese; the blue, by

cobalt; the green, by copper—also by cobalt, and yellow of antimony and lead; the ruby, by gold, or the purple of Cassius, and by chrome. White enamel is merely glass rendered more or less milky, or opaque, by the addition of oxide of tin; it forms the basis of many coloured enamels, which are tinged with the metallic oxides, as mentioned above.—Brands. Flint is extensively used for making roads, and in some parts of Kent it is used in building houses, churches, and walls. Part of Dover Castle is also built of flint, which are plentiful about there; they were formerly used in the gun lock—this use is superseded by the percussion caps.

ORIGINAL CORRESPONDENCE.

THE HOT-BLAST PATENT.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—In your Journal of Saturday last you print a paragraph headed as above, which is, "though probably not intended," an indirect attack on the substance of my paper, which appeared in your Journal of the 6th of August last, and it being the first and only notice of the kind that has come to my knowledge, I cannot allow it to pass without a few remarks. I have not the pleasure of knowing Mr. John Beaumont Neilson personally, and beg, in what I have to say, to disclaim all improper motives towards him; it has, however, been truly said, that a man is often in greater danger from the over zeal of his friends than from his enemies, and probably cause there may be for granting to Mr. Neilson a national testimonial, such should not be founded on truth; how far the reasons given in the paragraph in question may be so, the following observations will, in some measure, enable the public to judge. The first reason given is, that formerly nine tons of coal were required to make one ton of pig-iron, and that, by the use of hot air, the quantity used was only two and a half tons, and it is known to every man with any pretensions to a knowledge of the iron trade, that long before Mr. Neilson's patent, by a proper attention in the coking operation, the quantity of coal used per ton of iron had been reduced to five tons, making the saving two and a half tons only, and not six and a half, as stated. We are also told that the idea of iron made by matter of prejudice; but the entire period of the patent has run out, and countless quantities of iron have been made by the improved process, under the superintendence of iron makers of all grades of experience, and yet, in your Journal of the same date, is found, in your prices current—No. 1 pig-iron in Wales (cold-blast), 3l. 13s. per ton; No. 1 pig-iron on the Clyde (hot-blast), 2l. 10s. per ton—the latter, with many sellers, allowing have often been informed, through the public press, that the value of a ton of coals at the Scotch iron works is 2s. 5d., by which it is clear that the saving in making one ton of pig-iron by the use of heated air is, in coal used, 6s. 4d., and its value deteriorated in the market 1l. 7s. 6d. These notions are, in your paragraph, called prejudicial ones, and refer us to Messrs. Fairbairn and Hodgkinson's experiments, in which, if we turn to those published in the *Manchester Memoirs*, vol. 6th, will be found, amongst other facts of a similar nature, in the last column but one, which, in truth, contains the only results the nation at large has to do with—

| Oldbury cold-blast | | Power to resist impact. |
|--------------------|-------|-------------------------|
| Ditto hot ditto | | 877 |
| Elkair cold ditto | | 542 |
| Milton hot ditto | | 522 |
| Ponkey cold ditto | | 538 |
| Pucknash hot ditto | | 582 |

It must be here observed, the irons referred to are not made from inferior coal and ore, but of the best of these materials, as the table itself will point out by their results, from which it will be seen that the value in the market of the two different irons so made is pretty much in unison with their power to resist impact. The next, and I think, only point requiring notice, is that of working anthracite coal, for making iron by the use of hot air—some of the advantages of doing which have I any wish to depreciate, but, as a national question, we should not overlook the fact, that the good quality of iron so made is due, in a great measure, at least, to the purity of that coal; and we have been told, in a paper read before the Polytechnic Society of Cornwall, by a gentleman of great practical experience, that iron made with such proportions of anthracite coal and coke, as enabled him to use cold-blast, became much weaker on his using without again apologising to Mr. Neilson for having written it, but I trust he will see that the paragraph in question being in direct opposition in all its points of argument to the paper previously sent by me for publication in your Journal of 6th August, I could not allow it to pass unnoticed—indeed so, however, I trust nothing has been stated except what was necessary to the defence of my own opinion.

Barnborough Hall, Oct. 31.

H. HARTUP.

MINING IN THE UNITED STATES—LEAD MINES.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—As the importation of a certain quantity of this article has drawn attention to the subject, and excited the fears of some of our English lead miners, while it has been used to depress the prices here by those whose interest it may be to effect this object, so any information on which reliance can be placed respecting the American mines, their power of production, and the prices of lead in the country, has become more than usually interesting; and the accounts by Mr. Hodge, published in your paper, have been perused with attention, and the information afforded by them has been much conversed by persons concerned in the lead mines of this neighbourhood, who are well informed upon all that relates to the production of the metal in this country. It appears to them that some explanations are required to stamp the evidence offered with all the certainty and authority, which, in this case, is so particularly desirable, inasmuch as the vague reports as to the quantity that can be produced, and the low rate at which it can be afforded, have, in no small degree, tended to effect the present depression in the English lead market. Much of this has, without doubt, been owing to the uncertainty that has prevailed on the subject, and the contradictory nature of the statements that have been circulated respecting it. A perfect and accurate account of the state of things in the Wisconsin and Missouri lead regions would, therefore, at this time, be very valuable, and the object of my remarks will be to ask for such explanations as may tend to make clear a few particulars which throw some doubt on the accuracy of the statements you have published. They are not written with a desire to undervalue the communications made, but, on the contrary, to enable them to be made more complete and satisfactory, which, if you or any of your correspondents will undertake to do, they will have a further claim on the gratitude of those who are much interested in this matter.

Not to trespass too much on your space, and the patience of your readers, I shall pass over the accounts of the mines themselves with few remarks, inasmuch as they do not furnish data upon which a correct judgment of the productiveness of the district can well be made, and I shall content myself with observing, that the mines there seem to be attended with the same kind of uncertainty and risk as such concerns encountered by the miners. Mr. Hodge says—"Sometimes they spend a year in unsuccessful exploring, but with the expectation of being repaid for it all by a happy discovery." I think, also, it appears that the ground producing lead does not extend to any great depth, but falls as they are pursued in this direction. Our attention has been chiefly directed to the price at which lead can be produced in the country, it having been reported here that the lead which has found its way to Liverpool, and to some of the continental markets, is shipped at Baltimore, or some American port, at 13s. per ton, and being taken on board by the ships carrying light goods, is charged with little or no freight. The price of lead at Liverpool, at present, is about 16l. per ton, and, if entered for home consumption, the import drawback, unless commensurate, shipping charges, &c. Now, Mr. Hodge states, which is exactly 16l. per ton in English money. Again, he states, in an estimate of the cost and profit of smelting, that 2054 pigs of lead, averaging 70 lbs. weight each, were worth 4313 dollars, and it will be found that money amounts to 9425l., which gives 13l. 10s. per ton. Further, he informs us, that one was selling at Missouri Point, 5 dollars per 1000 lbs. of lead, which is, probably, correct; but, in the smelting account, it ap-

pears that, from 273,000 lbs. of such ore, the furnace only produces the 2054 pigs, weighing 70 lbs. each, which is 143,780 lbs. of lead, being but 52½ per cent.; and it follows, therefore, that there is an actual loss by smelting this ore, and selling the lead at 13l. 10s. per ton, unless we add, according to Mr. Hodge's estimate, 820 dollars for the value of lead to be extracted from the slag, and allowing this estimate for the present, subject to further remark, the profit on smelting 273,000 lbs. of ore, or 122 tons of ore, and making about 70 tons of lead in a month, would be but 244 dollars, or 48l. 13s., so that the smelter, at any rate, cannot afford to sell his lead cheaper than he appears to do, and that such a business affords no temptation to invest capital in it, especially in a country where it is scarce, and where the interest on money is very high.

If all this be correct, it is evident that the English miner has not very much to fear from the American mines, and if such ore cannot be purchased at a cheaper rate, the produce from the furnace he must increase, and the charges of smelting much reduced; it is not easy to conceive how any quantity of lead can be delivered in Europe at 16l. per ton, when it costs 14l. in the interior of the United States. Mr. Hodge, it is true, speculates upon modes in which a smelter may increase his profits by raising the ore himself, or in other words, becoming a miner also; now says they have very little, it is clear that they must encounter all the risks of mining, and, instead of gaining profit thereby, may incur loss, so that if engaging in this branch of the business, to calculate fairly, they ought to value their ore at the current market price, or they would often grievously deceive themselves; and it may be remarked, that we do not find our principal smelters in Great Britain much given to adventure in mines, and for good reasons, as the two points are of a very different character, each requiring much experience and attention, and being better managed by the individual attention which individuals separately engaged, can give to each.

Now, then, as to the additional information and explanations that the communications alluded to seem to require. In the first place, we see that lead costs 14l. per ton at Galena, which, we understand, is a little town on a river branching off from the Mississippi, high up the country, and very distant from its mouth, and, consequently, from New Orleans, any shipping port. It must happen that to convey it to New Orleans, Baltimore, or New York, for shipment to Europe, certain expenses must be incurred, either by the smelter, or by parties who may buy from him on the spot, and those expenses will include transport to the shipping place, profits or commissions to those through whose hands it may pass, interest of money, port and shipping charges, &c., &c., before it can be put on board, without knowing which, our judgment as to the probability of this trade must be imperfect, and we shall be obliged for any information on these points that Mr. Hodge or you may be able to give us.

In the estimate of the value of the slag it is taken at 5 dollars per 1000 lbs., or 2l. 5s. per ton, supposing it to contain 34 per cent. of lead, and, as in extracting the lead from it, so much loss must be expected on it as is allowed in reducing the ore (which is stated at 50 per cent.), the price is higher, we believe, than any smelter would give for it in this country, and, consequently, the small profits of the American smelter must be probably further reduced. Another circumstance connected with this slag puzzles us, and requires some explanation. It is said that 100,000 lbs. of it are required to produce the 820 dollars which converts the smelter's loss into a small profit. Now, where is this quantity to come from? We see that 273,000 lbs. is the quantity of ore put into the furnace, and that 2054 pigs of lead, weighing 143,780 lbs. are extracted. If 100,000 lbs. of slag are also produced, the total quantity coming out of the furnace will weigh 303,780 lbs., or 30,378 lbs. more than was put into it, notwithstanding the known dissipation of much volatile matter by the fire, such as sulphur, lead, water, &c., which our experience tells us is at least 11 per cent.

The estimate of expenses of a reverberatory furnace calls for some remarks. This is taken for four weeks, and the charges (including the purchase of the ore) appear to be 4889 dollars, while the selling value of the lead produced is but 4313—showing a loss of 576 dollars; and all that is reckoned upon to cover this loss, and to convert it into profit, is the slag, the value of which, as I have shown, seems to be very problematical. If we deduct the cost of the ore (4095 dollars) from the total charge of 4889, we find that the expense of reduction, including the carriage of the ore and lead, amounts to 794 dollars, or on each ton of ore 1l. 6s., and is not much more than might be allowed in England, and is, therefore, not capable of much reduction, but nothing being brought to the account for wear and tear, interest of money on plant, and stock of ore and lead, it is evident the charges are much underrated.

One thing may be gathered from the account which is very important—the expense of the labour of four men for four weeks is stated at 190 dollars, or nearly 40l.; this amounts to 10l. per month per man, or, apportioning it, as Mr. Hodge has done, to the head smelter, and what are called the "back hands," it will be 13l. per month each for the first, and 7l. for the latter. From this statement something may be inferred upon a subject which it is most interesting to be informed upon, as connected with the cost of producing lead in the United States—viz., the rate of payment for human labour, and respecting which nothing appears in those communications, except what is here quoted. It is most important to consider this subject, as upon it depends, not the cost only of the more reduction of the ore by smelting, which employs but few hands, but that of discovering and raising the ore, which can now be carried on to any great extent without the employment of large numbers of men. The cost of labour constitutes the heaviest part of the expense of all mining operations, and, unless this can be had at a reasonable rate, there are but certain very rich spots that can be worked with advantage. The rate of labour depends on the number of persons qualified to undertake it, compared with the quantity of work to be done. In the lead mines in Europe it is low, because the mining population is redundant; in Mexico and the United States it is high, because the number of skilful miners is limited. Judging from the wages assigned to the smelters in the account given by Mr. Hodge, we see that the instructed men get 13l. per month, and the more labourers 7l.; it is probable that miners, even moderately acquainted with their business, may earn somewhat between these two sums, and, if they are not so qualified, they are dear at any price. Taking the wages to be a probably fair estimate from these accounts, and this will agree also very nearly with information derived from other sources; we may, then, Great Britain the average earnings of good workmen will probably not exceed 2l. 10s. per month, and in those of the Harz district, in Hanover, it is not more than 1l. 10s.

To see how this bears on the price at which ore may be sold to the smelter in any country, it may be observed, that it must be a very rich mine indeed that will produce one ton of ore per month for each man employed underground, considering how many of them are engaged on dead work, and on the poorer parts, all which work is as necessary as that by which ore is extracted from the most productive points; and, in fact, there are very few mines in this country the produce of which bears such a proportion to the number of men working underground. Granting, then, that all the ore in the Missouri are of this rich class, and that there are some where, Mr. Hodge says, men spend a year in commercial capital, it would follow that if each mine earned 9l. per month, the price of a ton of ore cannot be less than that sum, or at least not under what we find it to be selling for at Missouri Point.

It will be remarked, and with justice, that such wages will naturally attract labourers, and that the number will increase, and the rate paid for their work will diminish. The first proposition is certainly true, and is giving on constantly, but the second does not follow as a matter of course, and, from certain causes, is not likely to be affected in the district in question for some time to come. We know that many English miners, from some cause that they earn very high wages, but when we have inquired they do not. They save money, and are enabled to purchase lands; they become proprietors of little farms, and leave their underground toil to new comers. This is natural in a country like America, and the temptation to the cause of a high rate being paid for human labour. Mining upon only, while the produce will support a price proportionate to the wages demanded. Information, however, on this point, is much to be desired, and it may be to your good, or that of some of your correspondents, to give it, and on under a service to the mining interest at home, inasmuch as the question, whether we are to be inundated with large quantities of

American lead at very low prices, as some persons pretend, is now a topic of great interest.

Were it not that I have extended this letter far beyond the limits I intended to confine it to, I might remark on some other matters in the statements which excite some surprise and observation. The charge of ore to the furnace, 10,500 per day of eighteen hours, and a produce of 80 pigs of lead, of 70 lbs. each, in the same time, by the labour of four men, is so much more than can be done in this country, that some mistake is suspected. The expense of wood for fuel seems to amount to nearly the same sum per ton of ore as is paid in many large establishments in Great Britain for coal, but, as the supply of wood must be constantly receding to greater distances from the smelting works, it seems to be probable that the cost of it may increase. The result of our impression, however, is, from what we can gather from Mr. Hodgson's communication, that the expenses which he assigns to the production of lead in the districts he describes are rather understated than otherwise—that the mines are not so exceedingly rich as they have been believed to be—and that, though they are to be found over a great tract of country, yet the working them is attended with risks and uncertainties common to such undertakings in all other countries. How it has happened that lead has been imported and sold at so low a rate in England and other places, is a matter, perhaps, not easy of explanation—the demand for ready money in the United States may have had something to do with it. A somewhat parallel case may however, be stated with respect to spelter, which, costing 13s. per ton to make it in Silesia, was for a time imported here, and sold in bond, at 11s.—advancing afterwards to between 30s. and 40s., until the revival of the manufacture at home again reduced it to its present prices.

Bakersfield, Oct. 31.

A LEAD MINER.

P.S.—The above was written before I had an opportunity of seeing your Journal of the 29th inst., containing a continuation of Mr. Hodgson's memoir, but as nothing therein appears materially to affect the views I have taken, I send it as it is, leaving any further remarks, if such should appear necessary, to some other occasion.

ORGANIC ORIGIN OF SLATE.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I most decidedly differ in opinion with Mr. Ansted; in the first place I am not prepared to admit the correctness of the term "metamorphic rock," as implying its igneous origin, still less am I inclined to concede to him the igneous origin of granite, gneiss, &c., or that extensive dislocations are unerring evidences of disturbance by subterranean mechanical violence. According to the definition of this gentleman, the term "schistosity," or "slate," must be confined to those formations which have the mineral character of cleavage. In this I also differ from him, otherwise we must exclude numerous bodies which are now generally classed under this general head: but confining my remarks to those species which are divisible into thin plates, or scales, I would ask what other reasons are to be assigned for the production of these mineral bodies? Slate rocks abound in most parts of the earth, either in solitary clumps, dome-shaped or tabular mounds or hills, stratified beds, and sometimes forming of themselves mountains and mountain chains; they are found capping granite and other crystalline rocks, or uniting with them, following the various dislocations of the lower bed, and embracing in their bases the loose consolidated aggregates over which they have been deposited. Upon analysis they are found to consist of various proportions of silicious earths, alumina, magnesia, manganese, and other products, well-known constituents of the superficial beds of the earth. The new forming sedimentary deposits which bear the most striking analogy to the slate mineral species are—the blue adhesive clays, forming the bases of peat; of the deltas of America and Asia; and of all soils of considerable depth through which the waters percolate from the surface to the base of the formation, and constituting the base. As I cannot, in a few words, give Mr. Ansted my experience of foreign countries, I will simply call his attention to the peat bogs, where they are of great depth; for instance, the bog of Allen. As the peat continues its growth, so a corresponding decay of its parts takes place, and the silicious earths as they are generated fall by their specific gravity towards the bottom of the bog—thus a continued increasing pressure on the decomposed fibres of lignite, of which the bog is composed, causes them to consolidate into a fine blue adhesive clay, having a lamellated texture, every year, in the generation and decay of vegetable matter, adding to the previous formation, until it attains many feet in thickness; and if the bed of lignite is disposed over a calcareous soil, the percolating waters blend to a certain depth with that soil, producing a grey unstratified marl, the one and the other being of dense and uniform qualities: the periodical depositions brought down by the Nile, deposit in this lamina, as is observed on the river banks, there being the characteristic of mineral cleavage from the bed of the river to the surface soil: the calcareous formations on which this vast sedimentary deposit rests, also, by acquisition of alumina, potash, iron, and other compounds, become new and important products, entering into the mineral state of rocks, stones, and minerals, in consonance with their natures. The sedimentary deposits forming the Delta of the Ganges, are converted in the river's bed, and in the lower portion of the surface stratum into an unctuous blue clay, more or less blended with sands; and vast deposits of timber are found imbedded therein in the several stages of mineralisation as coal; the like phenomenon is also manifest at Demerara, the Delta of the St. Lawrence, Mississippi, and other great deltas of America. Again, these sedimentary deposits are periodically disposed over the ocean bed, blending with chlorides, soda, magnesia, and other properties of the waters: these are but a few of the analogous formations, but enough to show their vast extent and variety, the marks of cleavage, or of continuous depositions, layer upon layer being more or less distinguished in all of them.

We have no one instance of the ejected material of volcanoes assuming the lamellated structure; argillaceous earths are ejected from many of the chief volcanoes; they are distributed over and among beds in a similar manner to slate, but the ultimate result, if consolidation takes place, is invariably humil, and, if not consolidated, the material undergoes no other perceptible change than change of place. That schistosity is not volcanic is further demonstrated by the qualities of some species—thus, in some we observe vast quantities of bitumen—in others, as in those of Cornwall and Devonshire, the copper, and other metals, with the sulphurates and chlorides, and the richest lead mines of Wales are disposed in schistosity beds; in others, as in the Fvevnoir of Angers, fossil organic remains are found—this latter formation, extending over two leagues, abounds with the fossil organic remains of peacocks, a kind of crab, and vast quantities of pyritous impressions of *pusa* *de* *mer*. The White formations, notwithstanding their new name, I still contend to be schistosity, as also much of the slate of coal beds, which almost invariably have the regular character of cleavage.

The admirable theories of many geologists compel them to behold in every crystalline mass of rocks the evidence of an extinct volcano, and the consequent upheaving of the greater portion of the known beds of the earth—thus can error be received and sustained, requires a chain of false inferences and unproven suppositions to support it. That earth-quakes have shattered many of the beds of this and all other countries is a manifest truth, but it does not necessarily follow that the volcano was in the immediate neighbourhood; and, again, there are natural causes of extensive dislocations—thus, when sedimentary depositions extend over considerable areas of the earth, the lateral pressure they exercise causes local portions of them to sink in sands and other loose beds; again, this same pressure breaks in the walls of natural caverns, or reservoirs of water, and portions of the overlying beds sinking, producing extensive faults; again, local horizontalities of gases, in their unconsolidated state, produce explosions, partial upheavings, and dislocations; again, these beds, if condensed, once composed the surface, and were exposed to igneous heat, which, then, as it does now, must have produced extensive dislocations. Slate rocks are generally found capping, or in juxtaposition with crystalline rocks horizontally disposed, but it does not necessarily follow that the rock was crystalline before the schistosity deposition took place. In the schistosity formation of Pennsylvanian, in Cornwall, granite beneath the bed in every direction, in veins of different sizes, and quartz veins in masses to all these formations; various rocks also occur imbedded in the matrix of slate, such as chlorite, talcose, and stone slate.

Mr. Ansted says that the common fact of crystalline rocks being of organic origin is entirely impossible of proof. And why is this?—Simply because we find organic remains within the walls of a schistosity to the dislocation and exposure extending observation in those parts of the world where the crystalline portions of Nature are called forth. I have observed granite in every stage of formation, under various aspects, but I

can only record these facts; I cannot convey the ponderable rocks from the extremities of the earth, where schistosity, the overlying bed is the proximate cause of its production: the primary material of granite is sand, or sands, pebbles, and various calcareous matters, the one and the other being of organic origin; the material of the schistosity is well known, while in its plastic state, as clay or marl, its effluents of potash, and its sulphate of alumina, percolate into and unite with the loose particles and aggregates of the underlying beds, chemical action takes place, and ultimately cohesion, the crystallisation of these particles, the matter of the underlying bed, and the qualities received being uniform; the crystalline mass is also uniform in the disposition of its parts; but if, as is often the case, organic remains within the bed are of any magnitude, from the decomposed state they are converted, into sparry nodules, such as Mr. Ansted may observe in the Aberdeen granite, in which the outlines of the organic body are still visible, and in which fossil shells have been found; the result is the same where the waters have introduced these materials, the sands in their pure state being gneiss, which is a species of schistosity, in the impure state granite forming a triple, and sometimes quadruple, compound. What is there in this explanation, I would ask, that is unreasonable? The operations of Nature are at once simple and effective—without violence, without miraculous infusions of rocks, upheavings of continents, or depressions of valleys. Again; Mr. Ansted may be assured that, on proper analysis of the various crystalline bodies known to us, it is possible to prove satisfactorily to all who are inclined to receive truth, that the compounds of which each is composed originate in organic action. I need only add, that geology is at best an uncertain science, and every year, in the facts afforded by investigation or by accidental discovery, geologists are driven to shift their ground, and to invent some new hypothesis upon the wreck of the old—thus the mark of age has been withdrawn from many of the sandstones—coal and metallic beds have been found where their existence had previously been disputed, or positively denied—salt water formations, upon closer examination, have turned out to be fresh, and rocks said to be igneous are now acknowledged by many to be the produce of all ages—the time when men can call in the aid of miracle to conceal their paucity of knowledge are rapidly passing away. I shall be happy to hear from Mr. Ansted again, or any other learned geologist within the walls of Cambridge, being always open to conviction as I am disposed on my part to instruct.

Cambridge, Nov. 3.

A GEOLOGIST.

MR. W. J. HENWOOD, F.R.S., AND THE DUCHY.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I trust the appeal of Mr. Henwood to the public will not militate against his claims to compensation, if he be not reinstated in his office. The general answer of our press-proud officials is, "if thou appealest unto Cæsar unto Cæsar thou shalt go." When, however, no redress can be obtained, we are driven to appeal to the justice of mankind at large, or our countrymen, in particular. Mr. Henwood is a man of the right stamp, and not one of those who have no sympathy with anything but a sickly sentimentality and a miserable cant where genuine British manhood is at a discount. It is gratifying to find that you have espoused his cause—nay, the cause of justice and equity, by bringing the matter a little more prominently forward, and I trust you will not lose sight of the subject until manhood has triumphed over a penny-wise and pound-foolish economy. I have had no communication with Mr. Henwood, and I trust he will pardon my writing on the subject.

Penzance, Nov. 2.

A. T. J. M.

PATENT WIRE ROPE.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I was surprised to peruse the notice in your last week's Journal, with reference to Messrs. A. Smith and Co.'s wire rope, and, without wishing to detract in the least from advantages I am ready to admit certain descriptions of wire rope to possess, I must certainly enter my protest against Smith's, to the exclusion of all others, being the all-perfect article you are pleased to describe. I hope, in the course of a week or so, to forward you particulars of experiments (as to cost and strength) now in course of operation in this neighbourhood, which will astonish those familiar only with statements hitherto made public.

Newcastle, Nov. 3.

N.

(We should not have given insertion to the letter of our correspondent, but that he has furnished his name (in confidence). We believe it is yet to be proved, that the wire rope manufactured by Messrs. A. Smith and Co. is not the best. All we can say is, as far as our experience goes, that nothing yet has been brought forward which has superseded it, or proved superior. We have no bias, and shall be glad to receive our correspondent's "particulars of experiments," which, if ready, should have been furnished with his letter—if not acquired, then he has no right to contemplate "astonishing those familiar only with statements hitherto made public." Time will show.)

SOUTHAMPTON DOCK COMPANY.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—The present letter contains a grave charge against the directors of the above company, to gain a temporary end, they appear to have deviated materially from "the truth." In the last "report" of the directors, dated 31st August, 1842, at page 3 are these words:—"The directors have the gratification to report that they have received and accepted Tenders for advances of money on the company's debenture bonds, under their Act of Parliament, and they anticipate now that the dock is getting into actual work, and the receipt of an income, these securities will be sought after as an eligible investment."—"That the dock is not yet in actual work, and in the receipt of an income, and that the 'Securities' are not yet sought after, is no matter of wonder with me; of such miscalculations of the Southampton Dock Directors, the proprietors have had very numerous instances already. But what I do complain of, is a deviation from the maxim—'Veritas temporis vincit'—in that such advances of money upon the company's debenture bonds had not been made. Let the proprietors inquire into this; if they care not for truth, let them decline inquiring, but I will not suppose that they will ever tolerate those who deviate from truth. That there may be no mistake in the matter, I tell such proprietors, as may wish so to inquire how they may satisfy themselves. In the 165th section of the Act of Incorporation, it is enacted, that 'an entry or memorial of every such mortgage or assignment, containing the number and date thereof, and the names of the parties (with their proper additions) to whom the same shall have been made, and of the sums borrowed, together with the rate of interest to be paid thereon respectively, shall, within fourteen days next after the date thereof, be entered in some book to be kept by the secretary of the said company, which said book may be perused at all reasonable times by any of the proprietors or mortgagees of the said undertaking, or other persons interested therein, without fee or reward.' Now, as I have done, so may other proprietors do, who wish to know the truth—inspect 'the book' at the company's office in Bishopgate-street. That the total sum the company had received on 31st August last (after advertising for month after month in the Times) was only £7000, I knew before, and some proprietors may recollect that after much difficulty I got the chairman to admit such fact at the 'Meeting,' but, that the said amount had been lent in one military loan by one individual, was as much at variance with the assertion in the 'report,' the being able to put forth, which the directors felt so much gratification (they ought to have felt something else at the time of writing the same), that I never imagined a directory could have so tried to mislead a body of proprietors. That a sum of money has been received since the 'report,' from a wealthy baronet, as a loan, I am aware, and that no mention of the same has, up to the day before yesterday, been made in 'the book.' I am also aware, although the loan was made more than fourteen days, or even six weeks since: I! The reason of this omission, I dare say, will be apparent in course of time. I have only to add, that if the proprietors are content with such irregular proceedings upon the directors' assurance, that 'as they would they could' explain, I am not content with the same, and shall continue to call upon the directors to conduct the business of the company in a proper manner for their 10000. per annum, and neither to deviate from their 'Act of Parliament,' or from 'Truth.' T. R.

City, Nov. 3.

P.S.—The next letter I shall trouble you with will contain 'Remarks upon the Report,' dated 15th of July, 1842, of James Walker, Esq., F.R.S., President of the Institution of Civil Engineers, &c., &c., to the Majesty's Exchequer Loans Commissioners, in answer to certain points respecting the 'Works' referred to them for Mr. Walker's opinion, in consequence of the Southampton Dock Company having solicited a loan of £20,000, to enable them to complete their Tidal Basin, and to furnish it with sheds, warehouses, and other conveniences.

RELATIVE EFFECTS OF AQUEOUS AND IGNEOUS AGENTS.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—Permit, in your truly valuable columns, devoted to science, to introduce a few remarks, suggested by reading Mr. Lyell's *Principles of Geology*. Speaking of the origin of volcanic action, he observes—"The aqueous and igneous agents are antagonist forces—the aqueous labouring incessantly to reduce the inequalities of the earth's surface to a level, while the igneous are equally active in removing the unevenness of the surface." I should have been disposed to have overlooked these truths, did I not find, on further reading, that they were made subservient to the theory of the gradual elevation and depression of continents and islands. It is an undeniable fact, that elevated portions of the earth suffer degradation to a vast extent, and that much of the material thus abstracted from the hill and mountain beds is carried into the plains, or into estuaries, seas, and lakes. The sea also, by its continued action upon particular shores, gradually encroaches upon those lands, and the waste is carried away; but, on the other hand, there are causes which preserve elevated regions, and which more than counterbalance the loss sustained from the action of running waters: thus, for instance, the most elevated regions of the earth are preserved from loss by a lasting coating of ice and snow; the middle, or cloudy regions suffer degradation to a small extent only, and the lower regions are generally covered with grasses, trees, and plants, which not only preserve the soil, but add continually to its quantities in the continued decomposition of their parts. Again, the material wasted or carried into seas, if of silicious qualities, is disposed by the tides in vast aggregates, composing sometimes mountain chains: thus, for instance, the Atlantic Ocean is filled with sand banks, running in parallel chains from north to south, and in masses vying with the most elevated mountains of the earth, and infinitely exceeding the continued decrease taking place in mountain heights: the like phenomena is manifest in other oceans, where sedimentary depositions are forming in the waters; for, of the matters thus abstracted from elevated regions, vast quantities are returned to the shores in the immediate neighbourhood; thus, while one portion of the shore of Great Britain is washed away, another and greater proportion is added by the decrease in volume of the waters, and by the materials which are continually thrown up on the beaches in embankments. Again, to aqueous influence we owe those vast coral formations, still increasing in tropical seas, extending over many thousand geographical miles, and forming mountains and mountain chains, which still continue to increase, until they reach the boundary of their natural element. Islands and portions of continents may be washed away, but the self-same aqueous causes produce islands, increase their superficial area, and add vast tracks to the various continents. The bed of the Mediterranean gradually fills up by successive depositions of shell-bearing and other animals, as well as by the matters held in suspension by the waters, but most of the hills surrounding it remain unimpaired, and the bed of the ocean increases in dissimilar local quantities.

Again, as respects volcanoes, it is true the mountains have been produced by their active agency; but, on the other hand, for one mountain produced, twenty may have been levelled to the plain—their interior beds being burnt or rent to pieces and scattered by the explosive forces over the valleys and plains: thus, many of them have been elevated, and, in the wreck of one mountain, the crater of another mountain has appeared. The volcanic cone is elevated in one year—it is depressed in the next—it is destroyed in the next, and disappears for ever. The volcano is the result of union of the two great antagonist forces—the conflict is begun in this union, and all the phenomena proceed therefrom; the volcano is, in action, as much a levelling power as the water: thus the island appeared in the Mediterranean for a few days—it awakened our curiosity—it gave birth to a thousand extravagant fancies, and then disappeared for ever. The continued preservation of dry land does not, as Mr. Lyell supposes, depend upon partial and gradual subsidence of the bed of the ocean, but upon the creative or producing powers, continually in action, whereby the ethereal, gaseous, and aqueous volumes become in union with each other in definite proportions, consolidated bodies—an equivalent for the daily loss of the atmosphere and of the earth being found in the daily increase of the earth. The opinions of eminent philosophers, which, in numerous cases, form the groundwork of modern science, are untenable in the present day—the sum of eternal matter is, of necessity, ever constant, although its modifications are indefinite, but the sum of matter of planetary bodies is as perpetually fluctuating in its quantities as it is varying in its results.

Oxford, Nov. 2.

W. L., B.D.

MINING IN SPAIN.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—At a time when attempts of no ordinary character are being made to induce our industrious Cornish miners to embark for "all-promising" Spain, on the promise of high wages and lengthened engagements, any information calculated to convey an idea of the system adopted in that country, and the nature and effects of the employ to which they are about to proceed, cannot fail proving of the highest interest—at least, the following particulars, being so considered by several readers of your interesting Journal, I trust you will not fail devoting space to give them publicity in the mining districts, and if, by so doing, any portion of the misery, which I fear there is too much reason to apprehend, may be averted, I am sure the satisfaction will be as high to you as to me. The information here conveyed should, at all events, deter such as are inclined to proceed from so doing, until due inquiry be made, and satisfactory arrangements entered into, for the risk is, indeed, great, and the remuneration should be proportionate. When we find that 12½ per cent. of the population employed at the mines has been taken off in a space of five years, and, as is generally believed, chiefly from the deleterious effects of the employ to which the English miner is now destined, it is surely not worth while, for the sake of prospective advantages, of, at the utmost, a few years' duration, to risk the misery (or, perhaps, death) as detailed in these articles.

London, Nov. 3.

A CORNISHMAN.

(The articles forwarded by our correspondent will be found in another column. The truth of the statements, however, we are not at all prepared to confirm, but, as they contain much interesting information, we insert them, in the hope that they may attract the attention of some of our readers, who may be enabled to verify or controvert their truth.)

LEVELLING.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I have lately been engaged in levelling, for the purpose of taking up from a river, and bringing on a level (for the purpose of working an overshot water-wheel for draining a mine), a distance of two miles. I will probably be satisfactory to many of your practical readers, as well as myself, if one of your scientific correspondents will state what allowance should be made on this occasion for the curvature of the earth, and how it should be applied, and, at the same time, favouring us with the general theorem for solving questions of this nature.

Collington, Nov. 1.

JOHN BUDEN.

NEW PATENT FOR IMPROVED FUEL, SMOKE COLLECTOR.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—In the list of new patents published in your last Journal, I find one, obtained during the month by Mr. C. T. Holmes, an improved mode of using certain materials as fuel; also one for method for collecting the smoke and soot arising from the use of such fuel, which apparatus or method is applicable to the smoke or soot arising from the ordinary combustion of fuel, and application of the products arising from the combustion of solid materials, as a manure, and for other useful purposes. I presume the omission must have been accidental, for the of the inventions have been acknowledged by many scientific men, and have had an opportunity of testing them, and, as such, I am entitled to a place in your interesting work.

Gloucester-street, Nov. 2.

COAL IN SURREY (?)

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—Having heard the following relation from an acquaintance, I send you the particulars, as the fact may be important. My informant states that about the year 1835, during the excavations for the Southampton Railway at Finsbury, between Guildford and Farnham, and about four miles from the station at Hartley-cum, they discovered a deposit of coal of excellent quality; that he burnt some portion on his own fire; and that many persons in the neighbourhood obtained large quantities of it, and no more notice was taken of it than of the other soil thrown out. The spot in question is just on the outcrop of the chalk formation, and, consequently, nearly too high in the series of strata for the development of coal. If such was the fact (and I cannot doubt the veracity of my in-

erment, though he is not skilled in geology, has it been a local vegetable deposit, which, from peculiar circumstances, has become an inclosed part, or imperfect coal, or lignite? or is it possible that it can be a straggling outcrop of the nearest regular coal deposit, which, according to a geological map, would be Kingwood, near Bristol, about eighty miles from the spot? Some of your numerous geological readers who may be acquainted with that part of the kingdom, will, perhaps, favour us with their opinions on the subject, and inform us if there are any indications of its extension beyond the spot named.

A TYRO IN GEOLOGY.

Clarkswood, Oct. 22.

PATENT WIRE ROPE.

SIR,—I am writing your notice, in last week's *Journal*, attributing to the rope a possession of qualities very far beyond those of any other description of similar material employed in mining districts. I must beg to draw your attention to Messrs. B. Edge and Son's flat chains (some particulars of which I inclose), and the superiority of which has only to be known in those districts where they have not been introduced to be highly appreciated; indeed, I have known many instances where the flat chains of Messrs. Edge and Son succeeded admirably where the wire rope has entirely failed.

A SUBSCRIBER.

Gateshead, Nov. 1.

[We are obliged to our correspondent for the information conveyed in his letter, but, while we give it insertion, we must decline that of the "particulars." We do not, for a moment, entertain a doubt that the chains of Messrs. Edge are all that can be required, but we must have accurate data on which to ground an opinion ere we can determine in favour of the one or other. As the letter of our correspondent is anonymous, our request is rendered the more necessary—at the same time, we may observe, that we will give ready insertion to the "particulars," if duly authenticated, and leave our readers to judge.]

MINING IN AMERICA.

ON THE WISCONSIN AND MISSOURI LEAD REGION.

(Continued from last week's *Journal*.)

Attention is now directed to the probability of parts on the lakes becoming shipping points for Wisconsin lead. In this case, those mines farthest east would be the most important—these are on Sugar Creek, and a reverberatory furnace has lately been put in operation there. No great confidence, however, is expressed by the miners generally in the continuance of the ore—I did not see them; they lie about 100 miles west of Racine, the nearest port on Lake Michigan, to which runs the national road, finished to Rock River, in the direct way to the mines at Sugar Creek. This is one of the best roads in the territory; all the gullies are bridged over, and, excepting a few months in the wet season, is very passable. I have made the following estimate, from which some idea may be obtained of the expense of hauling lead across the country:—

Estimated expense of hauling lead 100 miles east to Racine.
Four horses (or mules better) will haul two tons and come back in eight days, will eat a bushel of oats to a span of horses, or half a bushel to a span of mules, per day. Oats worth, at the most, in the eastern part of the territory, 25 cents. One amount of oats for four horses..... \$4 00
Four horses (or mules) put up at night, thirty-two nights, 124 cents..... 4 00
Board of driver, 75 cents per day at most..... 6 00
Baggage costs, \$75; horses, \$75 each (mules, \$35), eight days' interest, at 10 per cent..... 1 00
Four for wear and tear of waggon, per year..... 25
Hauling from horses, per year..... 50
Total of haul, per year..... 2 25

Now, between the lake and Rock River country, no little amount of transportation is constantly going on, and the back loads, therefore, would pay for a great part of the whole expense. The price for hauling store goods and the lumber to Janesville, on Rock River, is 30 cents per cwt., equal to \$30 or load of two tons. When it is remembered that all the pine used in the eastern part of Wisconsin and northern part of Illinois, in the neighbourhood of Rock River, must be brought in from the lake, and that this is the best route, and when also the rapid increase of that most favoured district, the Rock River country, is remembered, confidence may be felt that a line of roads would be almost supported by the back loads; and, to secure one always, it might be an object to the owners to have a depot for lumber at Janesville. Fine boards are worth, at Racine, from \$10 to \$15 per 1000 ft., or when carried to Rock River they sell for \$25. For about two months of the spring and fall seasons no hauling could be done for bad roads, and, perhaps for two months in the year, 30 cwt. would make a load.

Inquiries made of those navigating the lakes, masters of steam-boats and schooners, it is found that, in common times, when the supply of wheat is carried east is not in excess, they would contract to take lead to Buffalo and forward it by the canal to New York for \$12 per ton—nearly 54 cents, or 100 lbs. That from Mineral Point to New York, to Galena 20 cents, New York \$1 25 = \$1 45 per 100 lbs. This leaves 91 cents per 100 lbs., or \$20 30 per ton for the expenses to the lake, to make the amount of transportation equal to that by the way of New Orleans—but the estimated expense was \$31 75. The difference, and a large balance for any under estimate of the expense from the lake to New York, would be supplied by the back loads.

This subject is entitled to the more serious consideration, from the fact that the lead now used throughout the whole country bordering on the great lakes, as well as in New York state, is carried from the mines near the Mississippi River to New Orleans, thence to New York, and by the canal to the East—thus making a circuit of nearly the whole Union. To supply short ore immediately to this vast region—thus saving the expense of running up transportation—would seem to be a good business. Leads of it are occasionally now taken from the tower at Helena, on the Wisconsin River, across the country to Milwaukee, but more finds its way back to the territory, on after making the long tour to the south and east. The great saving in cost, too, would be an additional advantage of this route. It is open so early in the spring, that lead would get to New York as soon as from Galena, although it would be on its way first from the latter port.

A charter has been obtained for a canal to be constructed from Milwaukee to Rock River, by which a means of cheap transportation thus far would be secured—but this is not likely to be soon completed. When it is, the Peconia will, no doubt, be cleared and opened for slack water navigation, and will go from the vicinity of Mineral Point down the stream, and either to Rock River, and across to the lake, or down it to the Mississippi. To cut off all the resources of this favoured region, besides its lead and copper and iron ores, would demand the limits of a volume rather than an article for the *Scientific Journal*. Blessed with a delightful climate, rich soil, fine streams, a surface and natural growth admirably adapted for grazing, it promises to become the most important part of the great western country. Its inhabitants are industrious and enterprising, and the emigrants that are gradually filling the territory are principally hard working farmers from the eastern states. Near St. Louis, within six miles of it, in the west and south-east, occur the bituminous coal measures; these are also found opposite the city in Illinois, on Muddy Creek to the south, and at various points up the river, as far as the mouth of Rock River; on leaving St. Louis, and proceeding to the south, one comes immediately to the great carbonaceous formation, which is here as productive in lead ore. Heavy beds of iron ore, interstratified with the limestone, and the formation in places of the carbonaceous than carbonaceous character. The dip of these local centers, for the most part—they appear to be horizontal. The beds and ranges of granite hills often intersect the limestone in a direction nearly north and south; they seldom seem to be in the dip of the stratified rocks in contact with them, as if they have been projected through them, and this would indicate that the limestone and sandstone had been deposited when the granite was in its present position; but, of the limestone, and from the fact of metallic veins, and at the point of contact, I am led to the opinion that the granite is recent rock, and that many veins may, with care, be traced and near its line of junction with the limestone, and sandstone, and the limestone comprises heavy beds of a rock, exceedingly hard, like the French limestone, and, in some places, is suitable for millstones. There, too, abound in it mammillated masses of quartz rock encased with crystalline, veins of calcareous matter, by the name of "tuff" and lumps and beds of hematite, which are now considered, in Missouri, indicative of the great lead ore veins. These, unlike the copper ore veins, occur at some distance from the granite, which agrees well with the position of lead and copper mines in Cornwall—the tin and copper being found near granite, I, unfortunately, misapprehend, but, at a distance from it. The opinion, too, to my knowledge, contains veins of iron; there are every where the limestone, and in those places where the conditions in the present, as miners are wrought. This rock is constantly useful as a stone, for the furnace gas-lights, and it sometimes occurs of a suitable for the manufacture of glass, as at a locality four miles east of Calmar in the Farmington tract.

Lead ore occurs in various ways, frequently in horizontal strata in the limestone rock; in iron rock veins, which are subject to all the faults in thickness, in richness, and to all the changes that the latter known values in the primary rocks are; and also in vertical fissures in the limestone, either in loose "chinks" in the clay which fills these fissures, or in regular horizontal layers at intervals across them, or increasing the walls of the fissures, accompanying them as far as they are followed. When the strata open out into what appears to have been a large cave, now filled with clay and mineral, the ore occurs each side of the roof and floor, while within is the clay, and sometimes an empty space. These caves are often of large size, large enough to admit wheelbarrows or carts, and the incrustation of a foot or more of galena round their walls affords an small profit to the proprietors and miners. After working through these large openings they are bound to shut nearly up, leaving only a crack with a thread of ore, and this often leads on through impenetrable rock to a rich vein again, and to other chambers. The richest mine now wrought in Missouri—Valley and Perry's, in the southern part of Jefferson County—is of this character. Shafts have been sunk into the hill 110 feet, and adits driven into the hill sides. In general the workings are very superficial, much of the ore being raised from the clay diggings, which seldom extend to the depth of twenty feet. Here the ore is in a horizontal position in the clay, as I remarked, and lies in this strata of limited and varying width, seldom exceeding thirty feet, and they are, probably, always in or connected with one of these fissures so common in the limestone. Throughout the several counties which are occupied with this formation, the miner recognises a proximity to the fissures by the abundance of the peculiar red clay, of the hematite iron ore, and of the botryoidal and mammillated masses of quartz rock, and the exact position of the fissure itself is often indicated to his experienced eye by a slight sinking of the surface, and by an east and west or north and south line of bushes or small plants, which have deep striking roots, and choose a situation, where they can send them deep down into the clay. Still these guides are not always sure, for men used to the business often spend a year or more in "prospecting"—that is, in sinking experimental shafts, or following a fissure in hopes of its yielding a rich return of ore, and all without success; but, by continuing their work, if their means allow of it, they seldom fail of finally striking a "lead," the sale or working of which repays them for all their labour.

WALDRON MINE.—This, though now considered of little importance, is a place where considerable copper ore has been raised. It lies a little east of the Iron Mountain ridge, five miles east of Calmar. The diggings are on the side of a low hill, and appear to follow an old fissure extending north-west and south-east, nearly in a direct line, with some branching, over an extent of about fifteen rods in length. No rock is exposed anywhere in this place; the loose pieces are of a compact quartz rock, of a similar character with that of the Iron Mountain ridge; here it may be meeting the limestone, though none is exposed. The diggings are all superficial, and nothing is now to be seen of the contents of the fissure but heaps of the red ferruginous earth that was thrown out. In these are seen pieces of hematite iron ore and nodules of flint, with an occasional piece of green carbonate of copper, but the ore was carefully picked out and carried away when the mine was wrought; the greatest depth reached was about fifteen feet. The ore, from what I could learn, was principally gossan, with lumps of iron ore and green carbonate of copper intermixed, scattered through it. It was taken about two miles to the furnace, on Big River, where is good water power, and there smelted. The land, though poor, is covered with an open growth of good sized oaks.

From these insufficient data no conclusion can be drawn as to the real value of such a mine. Actual experiment, by the sinking of shafts properly directed, alone can determine its importance. The lumps of ore that I was able to obtain were not very promising in their quality, but the existence of the gossan is of itself a favourable indication that more ore will be found on sinking deep for it. The tract of land connected with the mine consists of about 180 acres, and could be purchased for \$3000, and probably much less. But though the indications of ore are sufficient to authorise a thorough examination by those interested there in such operations, they could not of themselves warrant a purchase of the property by any persons not engaged in mining in that section of country.

(To be continued.)

MINING CORRESPONDENCE.

ENGLISH MINES.

HOLMSTON MINING COMPANY.

Oct. 31.—I beg leave to inform you that, in Hithias's shaft, below the thirty fathom level, the ground continues favourable, and is sinking with good progress. In the 110 fathom level west the lode is ten inches wide, and worth 74 per fathom; the lode in the mine, sinking below this level, is small, and yielding but little ore. In the 100 fathom level west the lode is eighteen inches wide, and worth 306 per fathom; at this level east the lode is small and unproductive; the 90 fathom level, in the back of this level, is two feet wide, and worth 401 per fathom; the lode in the western stopes, in the back of ditto, is two feet wide, and worth 491 per fathom. In the ninety fathom level west we have been driving through the large cross-cut course, and are now cross-cutting to the lode; the lode in the eastern stopes, in the back of this level, is eighteen inches wide, and worth 306 per fathom; the lode in the middle stopes, in the back of this level, is fourteen inches wide, and worth 181 per fathom; the lode in the western stopes, in the back of ditto, is eighteen inches wide, and worth 306 per fathom. In the eighty fathom level east the lode is fifteen inches wide, and producing good stones of ore; the lode in the stopes, in the back of ditto, is fourteen inches wide, and worth 241 per fathom. In the sixty-two fathom level east the lode is much as last reported. We weighed on Friday last, 20th September, 207 tons, and sampled October ore, computed 207 tons, of good quality.

F. PHILLIPS.

TRETOIL MINING COMPANY.

Oct. 31.—The lode in the forty fathom level, east of Williams's shaft, is twenty inches wide—good tribute ground; the lode in the rise, in the back of this level, is eight inches wide—tribute ground. Henwood's shaft is down to the forty fathom level; we have commenced driving east and west on the lode; the lode in the east end is twenty inches wide—good tribute ground; the lode in the east end is fifteen inches wide—good tribute ground. We have not yet discovered the lode to the east of the cross-course. In the thirty fathom level, east of Henwood's shaft, on the north part of the slide-park lode, at the adit level, west of John's shaft, is four inches wide, producing a small quantity of ore. The lode which we are stopping in the back of the adit, east of Marston's shaft, is eight feet wide—very good tin ground.

H. WILLIAMS. J. MORCH.

TREGLIAN MINING COMPANY.

Oct. 31.—I beg leave to inform you that we have lately experienced a favourable change in the lode in sinking the engine-shaft, below the fifty fathom level, but cannot point out to you the extent of the change, from the great influx of water and the looseness of the lode, which we are obliged to close up with timber, to prevent the shaft from running together, and at present can only say it has produced good stones of yellow ore, but hope shortly, or as soon as it shall be sufficiently drained, to further develop its nature and quality, and will acquaint you thereof; we have deemed it advisable to sink the shaft to the depth of twelve fathoms below the fifty fathom level, before driving on the course of the lode, which will probably take about a fortnight to accomplish; we have also thought it advisable to employ twelve men in the shaft, instead of nine, to hasten its completion, it being of a rather troublesome nature. The lode in the fifty fathom level going east is composed of flint, pease, and spar, producing a little ore. The lode in the forty fathom level east is nearly of the same description, producing a small quantity of ore.

J. NINNIS.

WEST WYRAL JEWEL MINING ASSOCIATION.

Oct. 31.—Buckingham's shaft will be completed to the eighty-five fathom level by the end of this week. In the seventy east, on the south branch, the lode will produce one ton of ore per fathom, worth 61 per ton. The seventy east, on West Wyrall level, is worth 61 per fathom; the seventy west, on the lode, is worth 141 per fathom. The fifty-seven east and west on this lode has not been taken down since our last. The stopes in the back of the forty-two, east of little cross-course, are worth 301 per fathom. The end is four fathoms beyond, and we have cut in, in two or three places, where the lode looks well.

S. LEAD.

NEEDHAM UNITED MINING COMPANY.

Oct. 31.—The lode in the forty fathom level east is about two feet wide, composed of mangle, spar, and ore, and of the latter will yield about one ton per fathom; in this level west the lode is about eighteen inches wide, of mangle, spar, and a small proportion of ore, but not worth sinking. The appearance of the lode in the thirty fathom level east is just the same as last reported, in width about two feet, and indicating improvement. The pillars, on the whole, are looking just the same as for some time past, and will continue steadily to yield returns at present rates of tribute. The eastern shaft, at Wood Marston, is in regular course of sinking, and down about three feet below the first shallow level in good ground; the lode, it is estimated, will be in the shaft at about seven fathoms deeper, and it is hoped will be found increased in productiveness. The shaft at Drove Kitching is also in regular course of sinking, and down about ten fathoms from surface, in good ground. Our next sampling, fixed for Wednesday next, will, it is expected, be about thirty-seven tons, of a quality somewhat better than the last. I hope shortly to be enabled to advise you of improved progress and prospects.

J. H. HITCHING.

UNITED WILLO WINDING COMPANY.

Nov. 1.—Seventy Fathom Level, East End—Lode three and a half feet wide, one foot on the north part producing some good ore; western end, lode three and a half feet wide, producing some ore, but more in quality. Sixty Fathom Level—In this end, driving east, the lode is four feet wide, eight inches in the north part, producing ore of fair quality; in driving west the lode is three and a half feet wide, producing some good ore, but much corrupted with mangle. Fifty Fathom Level—The lode in this end is

three and a half feet wide, two and a half feet good ore; in the mine, sinking below this level, the lode is two and a half feet wide, one foot good ore, with a promising appearance. Eastern Shaft—Lode four feet wide, producing ore, but more in quality. Forty Fathom Level—Lode three and a half feet wide, producing but little ore.

N. LANGDON.

TINCROFT MINING COMPANY.

Oct. 31.—We have just commenced driving east and west at the sixty fathom level (new engine-shaft); the east end will produce about one ton of ore per fathom, with a promising appearance; there is a good lode in the bottom of the west end which appears to get higher up as we drive. The mine sinking under the fifty, to the east of the shaft, continues to look well, worth 401 per fathom. The fifty east is at present unproductive. The fifty west is worth about 51 per fathom. The fifty west in, on the whole, improving, though not yet rich. The mine in the bottom of the fifty is worth about 301 per fathom. A pitch in the back of the fifty has very much improved since my last; other places in this part of the mine remain stationary. The seventy-two, in old mine, continues to look well, both for tin and copper ore; we have not as yet cut the lode by driving south, at the eighty-one, but are now getting very near it. At Palmer's, driving west at the fifty-five fathom level from surface, we find some good stones of ore in the lode, with plenty of mangle and jack—a very promising end. We shall commence sinking the shaft again in a few days, on the whole our prospects continue good.

W. PAUL.

CORNISHAN MINING COMPANY.

Oct. 31.—During the past week we have been engaged in sending down the large pitwork to the seventy fathom level, and making other necessary alterations in the engine-shaft, and are now in a very satisfactory condition to meet any wet season, consequently have not opened much in the bottom level; it remains much the same as I reported last week. Chiverton lode, in the sixty fathom level, is one foot wide, producing good work; I do not calculate this to be the west end of lead by some fathoms. Having cut into the north lode occasionally in this level, we are now opening it through in the several places for the convenience of pitches; our prospects here hold good; we find a distinct and peculiar change, both in the ground and lode, has taken place three or four fathoms above the sixty. I said in my last report, our prospects are very encouraging for the seventy—I am happy to say it is still more so. Perhaps you are anxious to know the result of the south lode, at the forty fathom level; it proved to be a lode of lead running almost horizontal, making a little below, and six feet above the forty fathom level, we find it small and unproductive at the thirty-two fathom level, and thought proper to suspend it for the present, in working the pitches may show reason to resume driving it some future day. I have on other particulars to notice, but I shall be obliged to trouble you for a steam-whim soon. We are now ready to sink for an eighty fathom level, only waiting your order; please let me know whether we shall commence sinking against Friday next, so it is our setting-day, when we might cut the shaft—certainly there should be no delay.

J. WARR.

TAMAR SILVER-LEAD MINING COMPANY.

Oct. 31.—In the 120 fathom level the lode is eighteen inches wide, spunged with ore throughout. In the 115 fathom level the lode is two feet wide, one foot of which is good work. In the 105 fathom level the lode is poor, eighteen inches to two feet wide, producing ore, and promising. In the ninety-five fathom level the lode is six inches wide, ore. In the eighty-five fathom level the lode is still small and poor. In the sixty-five fathom level the lode is one foot wide, saving work. In the fifty-five and the lode is eighteen inches wide, chiefly composed of four spar, interspersed with a little ore. In the forty-five fathom level the lode is two feet wide, carrying a small leader of ore. On Saturday last was our monthly settling, and we have on our tribute department thirty-four pitches, employing ninety-men, on a tribute varying from 1/2 to 1/3, in the 1/2, on the value of the lead only, and also eleven bargains, employing forty-four men on tribute. We sampled on Friday last two parcels of rich silver-lead ore, computed eighty-one tons, and which is for sale on Wednesday, the 9th of November. At the north mine we have found it necessary to divide down the shaft, and cut a clean pit, before we commence sinking, which will require nearly a fortnight.

J. SPRAGUE.

TRELEIGH CONSOLS MINING COMPANY.

Oct. 28.—The Eighty, east of Christie Shaft—The lode is three feet wide, with stones of ore, but disordered by the cross-course—we expect an improvement soon. The Eighty West—We have about five fathoms to drive before cutting the lode. The seventy west is three feet wide, with a branch of ore, and improving in appearance. The sixty fathom level is two and a half feet wide, with stones of ore. The fifty west is much the same in size and appearance. The forty west is three feet wide, worth 71 per fathom, and improving daily. At Good Fortune the fifty-four east and west of shaft are worth 101 per fathom in each end. The forty-four east is also worth 101 per fathom. The forty-four west is worth 61 per fathom; and the lode in the thirty-four is worth 41 per fathom.

H. RICHARDS.

MINING NOTICES.

(Under this head we purpose collecting such paragraphs as may appear in the provincial and other Journals, having reference to discoveries and improvements in mining operations of home and abroad. It is hardly necessary to observe, that we must not be considered to admit the correctness of the information conveyed, which, in too many instances, requires cautious investigation—the ongoing expectations of parties in some instances, and the want of honesty in others, throwing a degree of responsibility on a Journal in giving publicity to reports, which we do not intend taking upon ourselves.)

MINING IN NORTH WALES.—In addition to the information of the successful operations at Llandudno Copper Mines, published in the *Journal* of last week, from the letter of a correspondent, we extract the following from the *Carmarthen Herald*:—The grand project of cutting a tunnel through the interior of Llandudno Mountain, leading to the celebrated copper works, has just been completed. This important undertaking reflects great credit on the enterprising spirit of the proprietors, E. Lloyd, Esq., of Cefn, and W. and A. Worthington, Esqrs., of Whitechurch; and also upon their agents, Mr. Thomas Jones and Captain Davey, under whose superintendence the work has been brought to a successful conclusion. The tunnel was commenced in February, 1854, and has been worked by twelve miners alternately, day and night. It is cut in a straight line, measuring no less than 974 yards, and is supplied with air by a windpipe, through a shaft, cut from above. It is constructed with an arched roof, and is six and a half feet high. It was known to the workmen for some days past, that they were approaching the boundary of the old works, the side of which stood in an oblique position with reference to the tunnel. The miners were directed to drill a hole through the side, which found its way into the confined water, in about 60 feet. Two additional holes were then cut above, of somewhat better than an inch diameter respectively, and instantly the water burst through, with great violence, in a stream of not less than 200 gallons per minute (according to minute calculations made by Captain Davey, of Llandudno), and ran through the tunnel like a cataract. It was computed that a body of water, 100 feet in depth, and of immense breadth, was vacated by this means from the works. When completed, it is anticipated that the tunnel will lead to a bulk of copper ore, and yet unexplored. The plans and designs, as well as the general management, were conducted under the superintendence of Mr. Thomas Jones, whose knowledge and experience in mining have given universal satisfaction. There has a work of more than eight years' labour been completed, without any serious accident, to the satisfaction of the proprietors, the credit of the agents, and the joy of the inhabitants of Llandudno. We heartily congratulate the spirited proprietors, and others interested, on the completion of their important enterprise.

FOREST OF DEAN COAL-FIELD.—It is a gratifying fact to us to have to announce to our readers that our enterprising neighbours, T. Prother, Esq., and Sir Thomas Phillips, will immediately begin to reap a rich reward from their spirited speculation in the Forest of Dean. The Great Western Coal Works, though it is but a twelvemonth since their perfection, have this week struck the finest and best vein of coal in the Forest—the Park-end hard black coal, and will almost immediately begin shipping. We heartily wish them success.—*Merch.*

MINE ACCIDENTS.

Credia Mine, Friesland.—On Friday night week, W. Thomas, G. Delbridge, and J. Hare, were at work in an old adit in Credia Mine, when the old timber gave way, and a quantity of rubbish fell and buried W. Thomas, who was not dug out until next morning, when he was quite dead. Delbridge had a very narrow escape.

Steam Engine on the Kingston Railway.—A few days since, at the Hibernian engine was waiting at the Kingston terminus for the mail, a terrible explosion took place, by which the engine and tender were thrown "head over heels" in opposite directions, and a shower of iron thrown to a considerable distance. On examination it appeared that the boiler (which is of copper, and of considerable thickness) had collapsed, and that the reaction of the sudden burst of high pressure steam, produced the extraordinary effects above stated.—The engine was one of those with vertical cylinders, of which the company possessed three, and the boilers were also of a peculiar construction, but from which no danger was ever apprehended. The construction of these engines in other respects not being approved of, as not admitting some important modern improvements, the directors some months since ordered three new engines to replace them, and which are now in progress of construction in the company's works. The first of these, the *Hibernian*, will be ready for work in a few weeks. Last, however, any steam should be noticed, the directors have given instructions that the two remaining engines of this construction shall not, in future, be used for the conveyance of passengers, and, from the perfectly different construction of the boilers of all the other engines, including those built in the company's works, no such accident can possibly occur.

CURRENT PRICES OF STOCKS AND SHARES.

In the early part of the week the sales of British securities were of an trifling nature as no one was willing to buy up the quotations, but a few purchases by the Government broker, on Wednesday, rather lowered the condition of the market, which found no other aid at the time. The Government broker continued to be the leading operator in the English securities on Thursday and Friday, but having received, on an average, about 100,000l. per week during the past three weeks. It is noticeable that this gentleman is acting in this transaction for the directors of the savings banks, who are employing their interest in the various permanent stocks for the East India Company Fund, and also for the directors of the Savings Bank, known as the British Savings Company—their transactions have been of an important nature. The transactions in foreign securities partake of the general depression. On Monday the half-monthly settlement took place, but was of no importance, and hence an easy adjustment was made. Spanish Bonds, 5 per Cent., have remained firm, at 17 1/2; ditto 3 per Cent., with dividends payable in London, 21 1/2; ditto 2 per Cent., 21 1/2; ditto 1 per Cent., 20 1/2; ditto 1/2 per Cent., 19 1/2; ditto 1/4 per Cent., 18 1/2; ditto 1/8 per Cent., 17 1/2; ditto 1/16 per Cent., 16 1/2; ditto 1/32 per Cent., 15 1/2; ditto 1/64 per Cent., 14 1/2; ditto 1/128 per Cent., 13 1/2; ditto 1/256 per Cent., 12 1/2; ditto 1/512 per Cent., 11 1/2; ditto 1/1024 per Cent., 10 1/2; ditto 1/2048 per Cent., 9 1/2; ditto 1/4096 per Cent., 8 1/2; ditto 1/8192 per Cent., 7 1/2; ditto 1/16384 per Cent., 6 1/2; ditto 1/32768 per Cent., 5 1/2; ditto 1/65536 per Cent., 4 1/2; ditto 1/131072 per Cent., 3 1/2; ditto 1/262144 per Cent., 2 1/2; ditto 1/524288 per Cent., 1 1/2; ditto 1/1048576 per Cent., 1/2; ditto 1/2097152 per Cent., 1/4; ditto 1/4194304 per Cent., 1/8; ditto 1/8388608 per Cent., 1/16; ditto 1/16777216 per Cent., 1/32; ditto 1/33554432 per Cent., 1/64; ditto 1/67108864 per Cent., 1/128; ditto 1/134217728 per Cent., 1/256; ditto 1/268435456 per Cent., 1/512; ditto 1/536870912 per Cent., 1/1024; ditto 1/1073741824 per Cent., 1/2048; ditto 1/2147483648 per Cent., 1/4096; ditto 1/4294967296 per Cent., 1/8192; ditto 1/8589934592 per Cent., 1/16384; ditto 1/17179869184 per Cent., 1/32768; ditto 1/34359738368 per Cent., 1/65536; ditto 1/68719476736 per Cent., 1/131072; ditto 1/137438953472 per Cent., 1/262144; ditto 1/274877906944 per Cent., 1/524288; ditto 1/549755813888 per Cent., 1/1048576; ditto 1/1099511627776 per Cent., 1/2097152; ditto 1/2199023255552 per Cent., 1/4194304; ditto 1/4398046511104 per Cent., 1/8388608; ditto 1/8796093022208 per Cent., 1/16777216; ditto 1/17592186044416 per Cent., 1/33554432; ditto 1/35184372088832 per Cent., 1/67108864; ditto 1/70368744177664 per Cent., 1/134217728; ditto 1/140737488355328 per Cent., 1/268435456; ditto 1/281474976710656 per Cent., 1/536870912; ditto 1/562949953421312 per Cent., 1/1073741824; ditto 1/1125899906842624 per Cent., 1/2147483648; ditto 1/2251799813685248 per Cent., 1/4294967296; 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